BLM LIBRARY
88055117

RECREATIONAL CARRYING CAPACITY

in the

CALIFORNIA DESERT

Phase 1-Approach

GV
191.42
.C2
U73
1978

#4316296

ID 88055117

GV
191.42
.C2
U73
1978

STUDY OF
RECREATIONAL CARRYING CAPACITY
IN THE CALIFORNIA DESERT

Prepared By

URBAN RESEARCH & DEVELOPMENT CORPORATION

Prepared For

DESERT PLAN STAFF
BUREAU OF LAND MANAGEMENT
U.S. DEPARTMENT OF THE INTERIOR

Contract #YA-512-CT7-232

May 1978

BLM LIBRARY
BLDG 50, ST-150A
DENVER FEDERAL CENTER
P.O. BOX 25047
DENVER, COLORADO 80225

EOS __ OCLC __ SL4 __ XPO __

REV/APP __ PRODUCE __

SAVE FILE 953

****

BLM LIBRARY
WORKFLOW CHECKLIST
(05/11/2004)

****

RECEIVE DATE _____

WHO HAS SEEN

BC __ DW __
CT __ NM __
BK ✓ KG __
JP __
AA __

DONATION _____

By _____

Notes _____

COLLECTION(S)

Oversize
Reference
Other CA80

DESERT PLAN STAFF

BUREAU OF LAND MANAGEMENT - U.S. DEPARTMENT OF THE INTERIOR

CONSULTANT

Urban Research and Development Corporation
Bethlehem, Pennsylvania

CALIFORNIA DESERT RECREATIONAL CARRYING CAPACITY ADVISORY GROUP

Dr. Stanley Brickler
Professor of Outdoor Recreation
University of Arizona

Dr. Michael Chubb
Associate Professor of Geography
Michigan State University

Dr. William Shaw
Assistant Professor - School of Renewable Natural Resources
University of Arizona

Dr. William Burch, Jr.
Professor of Social Ecology
Yale University

Dr. Guy Phillips
Assistant Professor of Environmental Administration & Science
U. of California, Riverside

Dr. A. T. Wilcox
Head, Department of Recreation Resources
Colorado State University

BLM ASSISTANCE TO CONSULTANT & ADVISORY GROUP

Robert Badaracco
Lead Outdoor Recreation Planner
Desert Plan Program, BLM

David Eslinger
Outdoor Recreation Planner
Desert Plan Program, BLM

Craig Tocher
Recreation Planner
California State Office, BLM

John Heywood
District Recreation Planner
Riverside District, BLM

Acknowledgement is given to Neil Pfulb, Director of the Desert Plan Staff for his overall guidance; Robert Schneider, Recreation Planner, El Centro Resource Area, BLM for field survey arrangements; and representatives from the Natelson Company for participation in workshop meetings.

CONTENTS

	PAGE
RESOURCE/ACTIVITY RELATIONSHIP GUIDELINES.	85
TENTATIVE RECREATION RESOURCE MANAGEMENT CLASSES .	89
General Recreation Areas	91
Low Density.	91
Moderate Density	92
High Density	93
Off-Highway Vehicle Play and Competition Areas.	94
Significant Natural and Cultural Areas	95
Wildland Recreation Areas.	96
FACTORS IN DETERMINING DESERT RECREATION CARRYING CAPACITY.	99
Management Factors	99
Bio-Physical Factors	99
Psycho-Social Factors.	101
DESERT PLANNING STUDIES CONTRIBUTING TO CARRYING CAPACITY DETERMINATION.	103
List of DPS Studies/Contracts.	104
Example of Questionnaire Completed for the Various DPS Studies.	107
Descriptions of Studies Deemed Most Significant as Inputs to Phase II.	108
Other Studies Which Will Contribute to Phase II.	113
KEY TERMS	117

ILLUSTRATIONS

PAGE

THE OVERALL RECREATION PLAN AND CARRYING CAPACITY FRAMEWORK - A Recreation Resource Allocation and Carrying Capacity Model. 27

EXAMPLE #1 - MAP SHOWING BLM AND NON-BLM LAND AREAS (Hypothetical) 35

EXAMPLE #2 - MAP SHOWING WILDLAND AREAS (Hypothetical) 35

EXAMPLE #3 - MAP SHOWING ENVIRONMENTALLY SENSITIVE AND SIGNIFICANT NATURAL AND CULTURAL AREAS (Hypothetical) 37

EXAMPLE #4 - MAP SHOWING CAPABLE GENERAL RECREATION AND OHV PLAY/COMPETITION AREAS (Hypothetical). 37

EXAMPLE #5 - FORMAT FOR IDENTIFYING CAPABLE OHV PLAY/COMPETITION AREAS 39

EXAMPLE #6 - FORMAT FOR IDENTIFYING GENERAL RECREATION AREAS 39

EXAMPLE #7 - MAP SHOWING CAPABLE GENERAL RECREATION AREAS AND POTENTIAL OHV AREAS (Hypothetical) 41

EXAMPLE #8 - PRELIMINARY RECREATIONAL RESOURCE CAPABILITY GUIDE PLAN (Hypothetical) 41

EXAMPLE #9 - MAP SHOWING THE RANKINGS OF AREAS WITHIN EACH MANAGEMENT CLASS (Hypothetical) 43

EXAMPLE #10 - RECREATION RESOURCE GUIDE PLAN (Hypothetical) 43

EXAMPLE #11 - PAST RECREATION USE LOCATIONS (Hypothetical) 45

EXAMPLE #12 - PRESENT RECREATION USE LOCATIONS AND USE LEVELS (Hypothetical) 45

EXAMPLE #13 - FUTURE RECREATION DEMAND (Hypothetical) . . 47

EXAMPLE #14 - PRELIMINARY USER DEMAND GUIDE PLAN MAP (Hypothetical). 47

EXAMPLE #15 - DESERT RECREATION SKETCH PLAN (Hypothetical). 49

EXAMPLE #16 - MAP SHOWING PRIORITY AREAS (Hypothetical) . 53

EXAMPLE #17 - DRAFT FINAL RECREATION PLAN MAP (Hypothetical). 53

DETAILED CARRYING CAPACITY METHODOLOGY. 60

EXAMPLE FORMAT FOR IDENTIFYING PRIORITY ACTIVITIES MOST IN NEED OF NUMERICAL CARRYING CAPACITY GUIDELINES. 62

EXAMPLE FORMAT FOR IDENTIFYING PRIORITY AREAS MOST IN NEED OF NUMERICAL CARRYING CAPACITY GUIDELINES. 63

EXAMPLE FORMAT FOR ORGANIZING CARRYING CAPACITY DATA AND DETERMINING DATA NEEDS. 65

EXAMPLE RANGE OF CARRYING CAPACITIES. 66

EXAMPLE FORMAT FOR ORGANIZING EXISTING DATA AND IDENTIFYING POSSIBLE INDICATORS OF OVERUSE AND OVERCROWDING . 68

CURRENT RECREATION ACTIVITIES IN THE CALIFORNIA DESERT. . 76

ACTIVITY COMPATIBILITY MATRIX 81

RESOURCE/ACTIVITY RELATIONSHIP MATRIX 86

SUMMARY

PURPOSE

The rapidly increasing recreational use of the California Desert has generated a concern and need for a rational approach to guiding the use and management of desert resources for recreation. The Bureau of Land Management has recognized the advantages of a rational approach to the Desert's use for recreation and is involved in a two-phase study of recreational carrying capacity in the California Desert: Phase I - The Approach and Phase II - The Determination of Desert Recreational Carrying Capacity.

This report presents the results of Phase I (The Approach) by:

- identifying factors essential to the concept of recreational carrying capacity in the California Desert,
- developing an approach (or methodology) for Phase II of the study that will identify classes of recreation management areas and develop specific management criteria for each class, and
- setting forth procedures by which recreational carrying capacities will be developed in Phase II.

The contents of this report represent the recommended approach for BLM to use in later preparing Phase II.

RECOMMENDED CARRYING CAPACITY APPROACH

Recreational carrying capacity, as viewed in this report, is defined as "the capability of a resource to provide opportunities for a certain type of satisfactory recreation experience over time without significant degradation of the resource." Inherent in this view of carrying capacity are the limitations provided by the bio-physical and psycho-social aspects of carrying capacity and by institutional/management directives and constraints.

A two-part approach is recommended for determining California Desert recreational carrying capacity in Phase II of BLM's study. Part 1 is an Overall Recreation Plan and Carrying Capacity Framework, and Part 2 is a Detailed Carrying Capacity Methodology. This approach is the result of many months of study regarding California Desert recreational resource characteristics and recreational use patterns as they relate to recreational carrying

capacity. The efforts of the consultant, the Desert Recreational Carrying Capacity Advisory Group and input from BLM recreation planners are all combined to produce the objectives and general direction for this two-part approach.

The approach is designed so that Part 1 (the Overall Framework), by itself, provides a substantial, meaningful carrying capacity basis for recreational planning and resource management in the California Desert. However, the approach also contains a second part which offers procedures for a more detailed, precise determination of carrying capacity in areas of greatest need and for monitoring resource and user changes to learn more about carrying capacity in the desert.

Part 1 (the Overall Recreation Plan and Carrying Capacity Framework) is a process which provides a rational basis for deciding how desert resources should be used for recreation and for arriving at a Desert Recreation Plan which includes general carrying capacity recommendations. This Overall Framework contains six major steps.

Step I Initial Planning Guidelines for organizing and presenting resource and user information in formats suitable for analysis.

Step II Independent Guide Plans including a guide plan for making decisions about the capabilities of desert recreational resources to sustain recreational use and a second guide plan for making decisions about recreation use patterns and future locations for recreation activity.

Step III Sketch Plan combining the results of the resource capability guide plan and the user/demand guide plan into a working plan for early evaluation and subsequent refinement.

Step IV Final Plan Guidelines including resource use recommendations, management objectives, carrying capacity recommendations and specific management recommendations.

Step V Draft Final Recreation Plan to be a desert-wide recreation use and management plan report.

Step VI Final Recreation Plan Element involving the final interaction of the Recreation Plan with all other Desert Plan

elements and the preparation of the Final Recreation Plan Element as an integral part of the Final Desert Plan.

Part 2 (the Detailed Carrying Capacity Methodology) is a portion of the Overall Framework (Part 1) presented above. It is a means of determining detailed carrying capacity values for some recreation activities or situations and a process for monitoring those activities for which specific capacity figures cannot or should not be determined within the scope of Phase II. The Detailed Carrying Capacity Methodology includes two major sections. The first section sets forth procedures for undertaking detailed carrying capacity studies of selected desert environments to arrive at empirically-based numerical carrying capacity levels. The second section outlines procedures for establishing and applying a recreational carrying capacity monitoring system.

RECREATION RESOURCE MANAGEMENT CLASSES & OTHER TOOLS

Tentative Recreation Resource Management Classes are recommended for use later in Phase II of BLM's Desert Recreational Carrying Capacity Study. The recommended classes are:

Low Density General Recreation Areas

Moderate Density General Recreation Areas

High Density General Recreation Areas

Off-Highway Vehicle Play & Competition Areas

Significant Natural & Cultural Areas

Wildland Recreation Areas

Other tools such as a desert recreation activity list, activity compatibility guidelines, and factors used to determine carrying capacity are also presented as guidelines for determining recreational carrying capacity in the California Desert.

1 INTRODUCTION

INTRODUCTION

PROBLEM & NEED

The California Desert covers approximately 25,000 square miles in the southeastern portion of the State of California. This area contains about 16 million acres, 12.5 million acres of which are public lands managed by the Bureau of Land Management.

The California Desert is a vast resource accessible to existing and emerging major population centers of Southern California. More than one-half of California's 22 million people live within a few hours driving time to the desert. The recognition and use of this tremendous resource for leisure time pursuits have grown significantly in the last quarter-century. The California Desert receives several million visitor use days (one person spending 12 hours in an outdoor recreation activity) annually; and use is increasing each year.

A wide range of recreation activities is occurring in the desert, from mechanical pursuits such as motorcycling and dune buggy riding to more contemplative outlets like photography and painting. Many recreationists are using the desert for more than one recreation activity. And, as peoples' recreation demands become greater and the desert becomes better known as a recreation place, desert use for recreation will continue to rise. Chapter 6 lists the major recreation activities taking place in the California Desert. Judging from past experience, new recreation activities are likely to be introduced in the future. The intensification of desert use for recreation has brought about several major consequences and concerns:

- Desert resources have sometimes been damaged or destroyed due to recreational use--the very resources which initially attracted the recreationists. The future of such resources is uncertain if heavy or indiscriminate use continues.
- Recreation activities have sometimes conflicted with one another because of noise, dust, functional interference, safety and other reasons. Conflicts can reach a point where the recreation experience the participant hopes to find in the desert is less than satisfactory. Dissatisfaction with desert recreation experiences will increase if conflicts continue and grow in number.

Increasing of desert resource destruction and user dissatisfaction must be avoided if the California Desert is to continue as an outstanding resource for serving a wide variety of public recreation needs. A better understanding of the recreational capabilities and limitations of desert resources, and the levels of use which can be sustained by those resources, is necessary to preserve the recreational qualities of the desert while offering a range of opportunities to the public.

STUDY PURPOSE

This is the first phase of a two-phase Study of Recreational Carrying Capacity in the California Desert. The two-phased study is a response to the need for a better understanding of desert resource capability and use for recreation. The Phase I effort described in this report is intended to:

- identify factors essential to the concept of recreational carrying capacity in the California Desert,
- develop an approach (to be used in Phase II of the study) that will identify classes of recreation management areas and develop specific management criteria for each class, and
- set forth procedures by which detailed recreational carrying capacity values will be developed in Phase II.

Therefore, Phase I of the Recreational Carrying Capacity Study presented in this report provides the basis for conducting Phase II which is the actual Recreation Resource Use and Carrying Capacity Plan for the California Desert.

THE CONCEPT OF RECREATIONAL CARRYING CAPACITY IN THIS STUDY

Many Different Perspectives

Recreational carrying capacity can mean different things to different people. Environmentalists, ecologists, and biologists have viewed and investigated carrying capacity primarily in terms of resource destruction and restoration. Sociologists and psychologists, on the other hand, have been mainly concerned with the quality of user experiences and the effects of crowding on human behavior. Site and space planners tend to view capacity in terms of the physical space required to effectively and safely conduct an activity. Administrators and managers may look at capacity in terms of cost-effectiveness, administrative ease, and the feasibility of exercising capacity controls.

The many different perspectives from which recreation carrying capacity can be viewed are all important when considering capacity in the California Desert. Ideally, the level and mix of recreational use of the desert resource should not exceed the carrying capacities as viewed from all these perspectives.

This study recognizes recreational carrying capacity in a broad context, defining it generally as "the capability of a recreational setting to provide opportunity for certain types of recreation experiences." Within this overall context, the study expands the definition of recreational carrying capacity to include the concepts of resource degradation and user satisfaction. In essence, recreational carrying capacity, as viewed in this study, is "the capability of a recreational resource to provide opportunity for certain types of satisfactory recreational experiences over time without significant degradation of the resource." Inherent in this view of carrying capacity are the elements of bio-physical carrying capacity and psycho-social carrying capacity. For purposes of this study, these carrying capacity elements are defined as follows:

Bio-physical carrying capacity - The level of recreational use of a resource beyond which irreversible biological deterioration takes place, physical and functional safety hazards occur, or degradation of the physical environment makes the resource no longer suitable or attractive for that recreational use.

Psycho-social carrying capacity - The level of recreational use of a resource or area beyond which the user's expectation of the experience is not realized and he/she does not achieve a reasonable level of satisfaction.

Multiplicity of Geographic Areas & Recreation Opportunities

The concept of recreational carrying capacity is also intimately related to the size and specific location of a geographic area. The number of recreation activities that can be undertaken in an area is also part of this concept. Carrying capacity, therefore, might be determined for:

- a specific, easily-defined recreation site involving a single recreation activity (a small picnic or unique natural/historic site)
- a specific, easily-defined recreation site involving a

combination of activities (camping area with picnicking, rockhounding and nature study)

- a resource type with the most appropriate recreation activities identified (sand dunes/dune buggying, dry lakes/ sand sailing)
- vast desert areas with a multitude of possible recreation activities (plains with capability for low intensity uses such as hiking, horseback riding, random camping, off-road vehicle riding on trails, etc.)

The California Desert exhibits all of these geographic/activity combination characteristics. Therefore, any approach to determining carrying capacity in the desert must recognize that carrying capacity can be treated differently, depending upon the degree of geographic specificity and the number and combination of recreation activities involved.

Carrying Capacity Specificity

Differences of opinion often occur among professionals and laymen concerning the level of specificity at which carrying capacity should be expressed. Some feel that carrying capacity values should indicate numbers of people or recreational units (campers, picnic tables, etc.) per acre (or mile) or users per season--a measurable, formula-oriented viewpoint. Others hold the opinion that carrying capacity can only be expressed in terms of the general, qualitative capability of a resource to provide opportunity for and to sustain certain recreational activities.

In the California Desert, it seems that both views are valid. For specific recreation sites used by relatively immobile recreationists, and easily monitored by resource managers, carrying capacity might be a very specific, numerical concept. However, when one considers a 100 square mile area used by very mobile, dispersed recreationists such as wilderness hikers and nature study participants, the difficulty of being specific about users or units per acre increases many-fold. Under the latter condition, it may be inappropriate to attempt dealing with carrying capacity at a level of specificity greater than one which designates general suitability of the area for certain recreation uses based upon general management objectives.

Without a doubt, the California Desert is a special and very

difficult place in which to determine recreational carrying capacity. For the reasons mentioned earlier, recreational carrying capacity is not viewed solely in this study as either a large area-oriented, generalized representation of recreational land use or a site-specific, detailed formula for number of users per acre of land. Carrying capacity in this study can be both of these, depending upon the specific resources and activities involved and the institutional constraints which may pre-determine resource use and management.

2 STUDY PROCESS

THE STUDY PROCESS

STUDY OPERATIONS AND PARTICIPANTS

The Bureau of Land Management recognized the need for a study of recreational carrying capacity in its overall work program for preparing a Desert Plan. When a decision was made to proceed with Phase I (this study), BLM advertised its intent in the Commerce Business Daily and issued requests for proposals (RFPs) from interested prospective consultants. Proposals were received and carefully considered by a consultant selection committee. Urban Research and Development Corporation (URDC) was selected as the consultant on this study. URDC's role was to guide and prepare all stages of this Phase I Study. A critical aspect of the consultant's role was to organize, convene and lead a group of recognized experts in the field of recreational carrying capacity so that they could contribute advice based on a variety of past experiences, provide constructive criticism of work prepared by the consultant during the study process, and review and comment on the draft final report.

A six-member Desert Recreational Carrying Capacity Advisory Group was formed by the consultant as the group of experts. The Advisory Group members were selected by the consultant on the basis of past experience in dealing with the overall concept of recreational carrying capacity and special expertise on aspects of carrying capacity including biological impact, resource analysis, social/psychological considerations, and policy/administrative concerns. The following were members of the Carrying Capacity Advisory Group:

- Dr. Stanley Brickler - Dr. Brickler is a Professor of Outdoor Recreation at the University of Arizona. He received a Ph.D. from Colorado State University.

  Dr. Brickler has been an advocate of carrying capacity concepts as applied to recreation resource use and management, and as related to the impact of land use on water quality. He has conducted extensive studies of carrying capacity in Rocky Mountain National Park and on the Colorado River in Grand Canyon National Park.

- Dr. William Burch, Jr. - Dr. Burch is a Professor of Social Ecology at Yale University. He has a Bachelor of Science and a Master of Science degree from the University of Oregon, and a Ph.D. from the University of Minnesota.

  Dr. Burch is a prolific researcher and writer on the subject of social behavior as related to natural resources and the environment. His sociological and environmental research has included studies in New Zealand, India and Japan. In 1977, he was a member of the advisory group for a National Science Foundation study on unquantified environmental variables. Dr. Burch is a Member of the Editorial Board of Land Economics and is Chairman of the Environmental Sociology Section of the American Sociological Association.

- Dr. Michael Chubb - Dr. Chubb is an Associate Professor in the Department of Geography at Michigan State University. He has a degree in Forestry from the University of Toronto, a Masters in Resource Development from Michigan State University and a Ph.D. in Geography from Michigan State University. From 1967 to 1971, Dr. Chubb held a full-time recreation research joint appointment in the Michigan State University Departments of Resource Development and Park and Recreation Resources.

  Dr. Chubb has been involved in recreation research or consulting assignments for the Michigan and Minnesota departments of natural resources, the U.S. Forest Service, the National Park Service, the National Academy of Sciences, and the Huron-Clinton Metropolitan Authority. He is the author of many articles concerning recreational resource use and carrying capacity including "Outdoor Recreation Land Capacity: Concepts, Usage, and Definitions" and "Park and Recreation Standards Research: The Creation of Environmental Quality Controls for Recreation".

- Dr. Guy Phillips - Dr. Phillips is Assistant Professor of Environmental Administration and Sciences. He is Chairman of the Environmental Administration of Program, Graduate School of Administration, University of California at Riverside. He received a B.A. in Economics and an M.A. in Resource Economics from the University of Wisconsin, and a Ph.D. in Environmental

Economics and Natural Resource Policy from Wisconsin.

Dr. Phillips has conducted research on the socio-economic and environmental impacts of recreational resource development projects for the National Science Foundation at the University of Wisconsin Institute for Environmental Studies and was a legislative and research aide to the Chairman of the Wisconsin State Legislature Committee on Natural Resources. He was an invited participant in the U.S. Forest Service's 1977 Workshop on Research and Development Needs for Planning and Management of Arid Lands in the Southwest.

- Dr. William Shaw - Dr. Shaw is an Assistant Professor in the School of Renewable Natural Resources, University of Arizona. He obtained a B.A. in Biological Sciences from the University of California at Berkeley, an M.S. in Wildlife Biology from Utah State and a Ph.D. in Natural Resources from the University of Michigan. Dr. Shaw has extensive experience in biological carrying capacity, including research in desert environments. He has been involved in studies dealing with the management of arid lands for wildlife as well as for recreational uses. In addition, he has studied public attitudes toward wildlife resources and the human aspects of natural resource management.

- Dr. A. T. Wilcox - Dr. Wilcox is Head of the Department of Recreation Resources in the College of Forestry and Natural Resources, Colorado State University. His experience spans over thirty-five years in the field of recreation and resource planning and covers a broad spectrum of carrying capacity considerations. Dr. Wilcox has experience in desert environments, having worked with Navaho tribes to develop recreation resource use plans in the Arizona desert.

  Dr. Wilcox's studies include, "A Study to Develop Practical Techniques for Determining the Carrying Capacity of Natural Areas in the National Park System", and "Carrying Capacity Study" which have been oriented to the identification of major types of stress on recreation areas and on the development of effective techniques for determining when stress reaches critical points.

Three Advisory Group Workshop meetings were held during the Phase

I Study process. The first workshop included one and one-half days of concentrated discussion and the remaining two workshops each covered four days consisting of two days of discussion and two days of fieldwork. Workshops were scheduled so that field work occurred on weekends when the heaviest recreation use occurs. The second workshop was held in Baker and the third workshop in El Centro so that workshop participants could experience the various desert environments of these areas.

The workshops were planned and directed by Urban Research & Development Corporation which issued workshop memoranda for study by participants prior to each workshop. Eleven workshop memoranda were prepared to guide workshop discussions. The Advisory Group and Urban Research and Development Corporation workshops and field sessions included BLM staff and other participants.

MAJOR STAGES IN DEVELOPING THE CARRYING CAPACITY APPROACH

Stage I - Documentation of Desert Recreation Resources, Activities & Carrying Capacity Factors

The characteristics of desert resources were documented, emphasizing the assets and limitations of resources for recreational use. Desert recreation activities were identified, including their characteristics, resource requirements, and user types.

The many ways of looking at recreational carrying capacity were identified and the complexities discussed. As a result of this process, a list of factors important to the determination of California Desert recreational carrying capacity was prepared.

State II - Preparation of a Framework for Developing a Specific Methodology

The first part of this stage considered the various ways of classifying desert recreation resources and activities and involved the development of alternative desert recreation environments (preliminary management classes).

Tentative management classes were prepared including detailed statements of purpose, examples of overall management goals, representative recreation activities,

and management implications. The appropriateness of these management classes was considered during the desert field trips.

Preliminary objectives were outlined as a basis for developing a specific approach for determining desert recreational carrying capacity.

Stage III - Preparation of A Specific Methodology

This stage refined the objectives for use in developing the carrying capacity approach and considered alternative methods of determining desert recreational carrying capacity. The two-part approach for determining desert carrying capacity, as recommended in this report, was then developed.

A work program with step-by-step procedures was set forth, including inputs, outputs, data formats and other guidelines for preparing the next phase (Phase II) of the Desert Recreational Carrying Capacity Study.

Stage IV - Report Preparation

A draft report was prepared based upon materials developed during Stages I through III and the results of the Advisory Group workshop meetings. The draft report was reviewed by the BLM staff and the Advisory Group members and comments and recommendations were reconciled prior to development of this final report.

3 BASIS FOR THE RECOMMENDED APPROACH

BASIS FOR THE RECOMMENDED APPROACH

OBJECTIVES

Any approach to such a complex, sensitive subject as recreational carrying capacity must be guided by a definitive set of objectives. The approach presented in this study is based upon the following main objectives:

Overall Recreation Plan & Carrying Capacity Framework Objectives (Part 1)

The Overall Framework should:

1. fit easily into the total Desert Plan Process;
2. make the best possible use of existing and ongoing studies of desert resources and recreationists;
3. recognize and address the many factors critical to determining recreational carrying capacity;
4. be comprehensive yet easy to use;
5. reflect the importance and reality of institutional directives;
6. reflect the most rational basis possible for determining recreational carrying capacity;
7. attempt to maximize desert recreation opportunities while protecting desert resources;
8. be more than a conceptual approach--it should contain procedures for determining specific, numerical carrying capacities where appropriate; and
9. provide a choice of treating carrying capacity in a general, planning-oriented way or, in addition, to initiate a detailed, research-oriented process.

Detailed Carrying Capacity Methodology Objectives (Part 2)

The Detailed Carrying Capacity Methodology should:

1. place considerable emphasis on providing capacity guidelines for recreation resource management classes;
2. recognize that many recreationists use the desert for multiple activities on a given trip;
3. recognize that carrying capacity is dynamic; that people's recreation preferences and activity patterns change over time;
4. recognize that recreational carrying capacity guidelines can be and should be expressed in numbers (such as users per acre) for some activities and situations, but that other circumstances do not lend themselves to numerical treatment;
5. consider the management implications of various levels of recreational resource carrying capacity;

6. incorporate institutional, bio-physical, and psycho-social aspects of carrying capacity.

IMPORTANCE OF MANAGEMENT CLASSES

Management classes have been an integral part of BLM's approach to land management. Heretofore, the general Bumeau of Outdoor Recreation Classes I through VI have been utilized for classifying some BLM recreation lands and sites. More recently, the BLM's "Interim Critical Management Program for Vehicle Use on the California Desert" (ICMP) substantiated the need to designate lands for recreation use in accordance with logical, pre-determined classes with definite purposes and overall management goals. The ICMP was a major stepping stone to BLM's realization that more comprehensive, detailed management classes should be developed.

The importance of tailoring recreation management classes specificially to California Desert resources and user situations was recognized early in this study. Also, the designation of desert areas according to management classes was recommended as one aspect of a desert recreation carrying capacity approach. Management classes, if developed with great sensitivity to desert recreational resources and opportunities, also provide a basis for identifying specific carrying capacity problems and for developing more specific carrying capacity guidelines for resource management.

This Phase I effort prepared tentative recreation resource management classes as one ingredient for developing a realistic approach to the determination of desert recreation carrying capacity. These tentative classes were prepared by the consultant, and discussed and revised at Advisory Group Workshop meetings. They are designed specifically for the California Desert and are offered in this report as a foundation for initiating the Overall Framework for carrying capacity determination in Phase II. Many alternative classification systems were considered and evaluated (including classification by major resource type, by type of experience, and by geographic unit) before recommending this system.

The tentative management classes are summarized below. They are presented here so that the reader of this report will have the opportunity to keep them in mind while becoming familiar with the recommended approach for determining desert recreational carrying capacity presented in Chapters 4 and 5.

TENTATIVE MANAGEMENT CLASSES

I. GENERAL RECREATION AREAS — The purpose of General Recreation Areas is

to provide opportunities for a variety of outdoor recreation activities and activity situations in a manner which recognizes and respects the natural limitations of desert resources. Low, moderate, and high density recreation areas are the three sub-classes which are intended to provide for recreation usage in accordance with various levels of resource capability.

A. Low Density General Recreation Areas

The purpose of a Low Density General Recreation Area is to provide opportunities for a variety of recreational use which would tend to produce minimum impact on the resource. A Low Density General Recreation Area is intended to be an area in which activities are conducted at considerable distances away from each other, in relatively small concentrations, and in a relationship which would result in minimum intrusions on other activities.

B. Moderate Density General Recreation Areas

The purpose of a Moderate Density General Recreation Area is to offer opportunities for recreationists to use recreation resources in a manner which can combine many different activities while protecting the experiences desired and the resources which have some limitations on use. A Moderate Density General Recreation Area is intended for use in a manner which enables activities to occur closer together and in larger concentrations than in a Low Density General Recreation Area, and farther apart and in smaller concentrations than in a High Density General Recreation Area.

C. High Density General Recreation Areas

The purpose of a High Density General Recreation Area is to offer opportunities for recreationists to engage in active and concentrated forms of recreation in resource areas which are most capable of withstanding heavy use.

II. OFF-HIGHWAY VEHICLE (OHV) PLAY & COMPETITION AREAS

The purpose of an Off-Highway Vehicle Play and Competition Area is to provide a variety of opportunities for heavy off-highway vehicle use and for recreation activities which customarily accompany OHV activities. These areas are intended to be the most capable of offering satisfactory OHV play and competition experiences in areas of the desert which can support these activities.

III. SIGNIFICANT NATURAL & CULTURAL AREAS

The purpose of a Significant Natural and Cultural Area is to preserve and enhance recreational experiences which are especially oriented to nature study, cultural interests, outstanding scenic quality, and scientific and educational values. A further intent of this class is to recognize and protect recreational resources which are particularly sensitive to human use.

IV. WILDLAND RECREATION AREAS

The purpose of a Wildland Recreation Area is to provide opportunities for people's enjoyment of a high quality level, natural environment, virtually unspoiled by human interference. It is intended to preserve the primitive aspects of the desert for those recreationists who seek the most solitude and remoteness from others in their recreational experience. This class includes existing primitive areas and designated wilderness areas.

A detailed description of each class, including example management goals, representative activities, and corresponding classes and recreation terms presently used by BLM, is presented in Chapter 6.

A TWO-PART APPROACH

The recommended approach for determining desert carrying capacity contains two parts:

- Part 1 - Overall Recreation Plan & Carrying Capacity Framework -- This overall framework is the process which provides a rational basis for deciding how desert resources should be used for recreation and for arriving at a Desert Recreation Plan which includes general carrying capacity recommendations.
- Part 2 - Detailed Carrying Capacity Methodology -- This detailed approach is a separate portion of the Overall Framework and represents a means of determining detailed carrying capacity numbers for some recreation activities or situations and a process for monitoring those for which specific capacity figures cannot or should not be determined within the scope of Phase II of the total BLM Carrying Capacity Study.

The recommended approach is divided into the Overall Framework and the Detailed Methodology because it provides some flexibility as to the detail at which desert recreation carrying capacity could be addressed in Phase II of the BLM Carrying Capacity Study in which a carrying capacity-based desert recreation plan will be prepared.

For example, the Overall Framework alone will produce carrying capacity results which are based mainly on the assumption that carrying capacity is the assignment of detailed recreation management classes to all portions of the desert. Each management class would have a detailed statement of purpose, management goals, appropriate recreation uses in that class, and certain guidelines for management of the resource and users in accordance with each classes' stated purpose and goals.

It would be quite appropriate for BLM to follow only the Overall Framework in producing an end result which provides useful recreation carrying capacity guidelines for management of the California Desert. However, if time and budget allow, the Detailed Methodology can be followed concurrently with the Overall Framework. This Methodology would add an additional dimension of carrying capacity research to Phase II of the Carrying Capacity Study. If the Detailed Methodology is not used, it will still have future value because it outlines a carrying capacity research program and a monitoring system which could be carried out at a later date in the course of implementing a California Desert Recreation Plan.

4 PART 1
THE OVERALL RECREATION PLAN & CARRYING CAPACITY FRAMEWORK

SUMMARY OF MAJOR STEPS - OVERALL FRAMEWORK

The Overall Framework is a six-step process for preparing the Desert Recreation Plan Element of the Desert Plan. It forms a logical, step-by-step, foundation upon which detailed methodologies can be constructed and utilized in Phase II of the Desert Recreation Carrying Capacity Study. It represents a recreation resource allocation and carrying capacity model.

Each step in the framework is accompanied by a list of inputs required to appropriately take the step, and an indication of outputs which should be realized from taking the step. Flow charts, step-by-step procedures, example maps, matrices, criteria, etc. are provided to guide the Desert Plan Staff (DPS) during the preparation of a Recreation Plan for the California Desert.

The six Overall Framework Steps are:

I - INITIAL PLANNING GUIDELINES

This step is an organization phase which serves to clarify purposes, directives, existing information, etc. and to organize and present resource and user information in a format suitable for analysis.

II - INDEPENDENT GUIDE PLANS

This step focuses on preparing two separate guide plans which should be independent of one another. The first guide plan is for making decisions about the capability of desert resources to provide a basis for and to sustain various types of recreation activity. The second guide plan is for making decisions about recreation use patterns and future recreation demand locations. The analysis of resource capability and user activity/demand includes a determination of the relative importance of capable resources and activity/demand locations.

III - SKETCH PLAN

The sketch plan step is an initial attempt to combine the results of the two independent guide plans--resource capability guide plan and user/demand guide plan. This phase designates desert areas according to recreation resource management classes. Rationales for these designations will be based upon the relative recreational significance of the various desert areas determined in Step II and the institutional guidelines and constraints identified in Step I. This sketch plan is intended to be a working plan created for early evaluation and subsequent refinement.

IV - FINAL PLAN GUIDELINES

This step is designed to provide more depth to the sketch plan by addressing general and specific management objectives, incorporating recreational carrying capacities and making specific management recommendations. Results of Part 2 (Detailed Carrying Capacity Methodology) are introduced into the process in this step.

V - DRAFT FINAL RECREATION PLAN

This step is the preparation of a desert-wide recreation use and management plan draft report, including recreation carrying capacity recommendations. Areas of the desert which require immediate or short-range concentrated planning and management would be indicated, and activity and management plans would be prepared for each area.

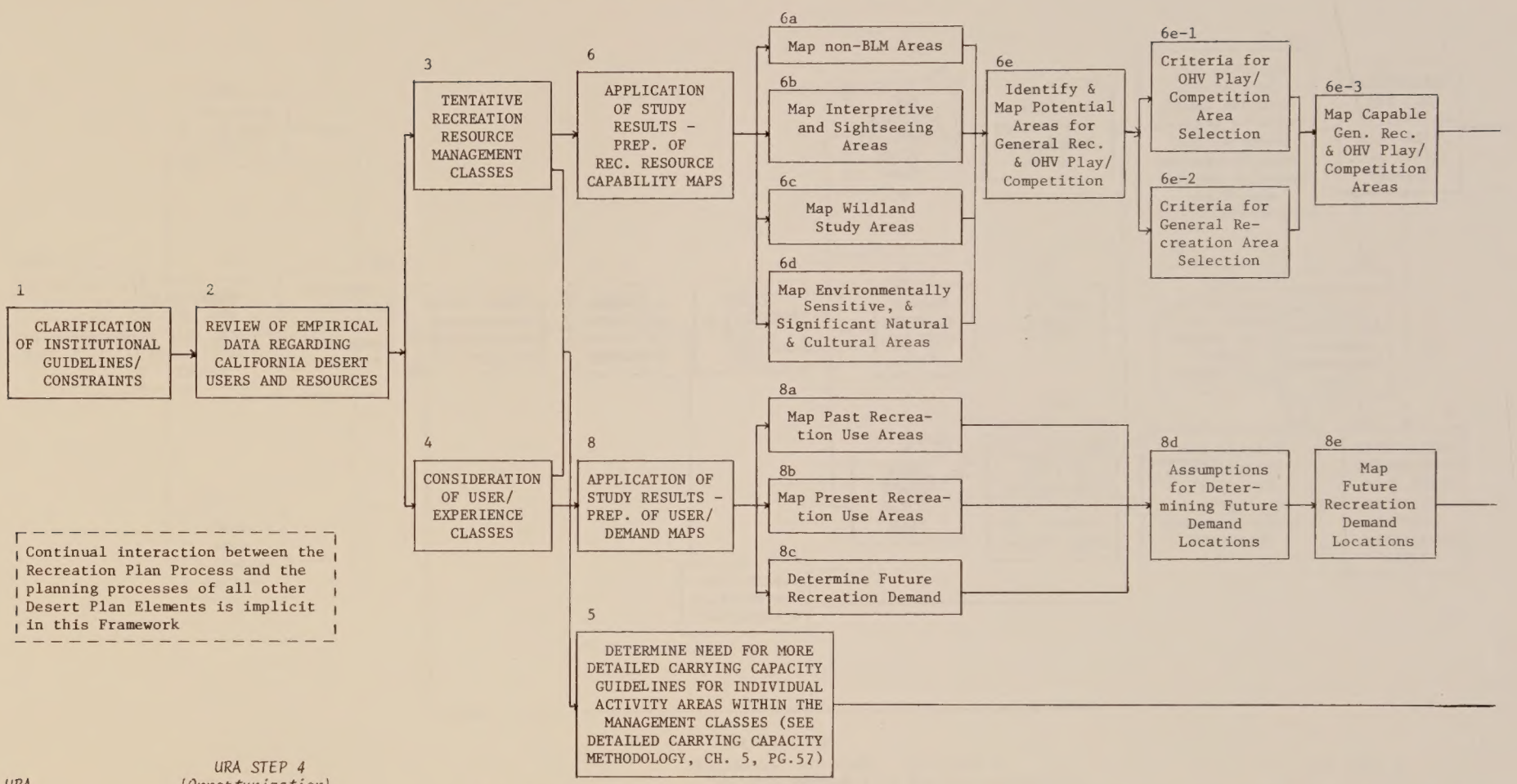
VI - FINAL RECREATION PLAN ELEMENT

The final recreation plan would be prepared in this step, which focuses on the interface of recreation plan recommendations with all other Desert Plan elements (wildlife, minerals, archeology, etc.). The Desert Recreation Plan would be viewed in the context of multiple use recommendations and, following final public input, a Desert Recreation Plan Element would be prepared within the Final Overall Desert Plan.

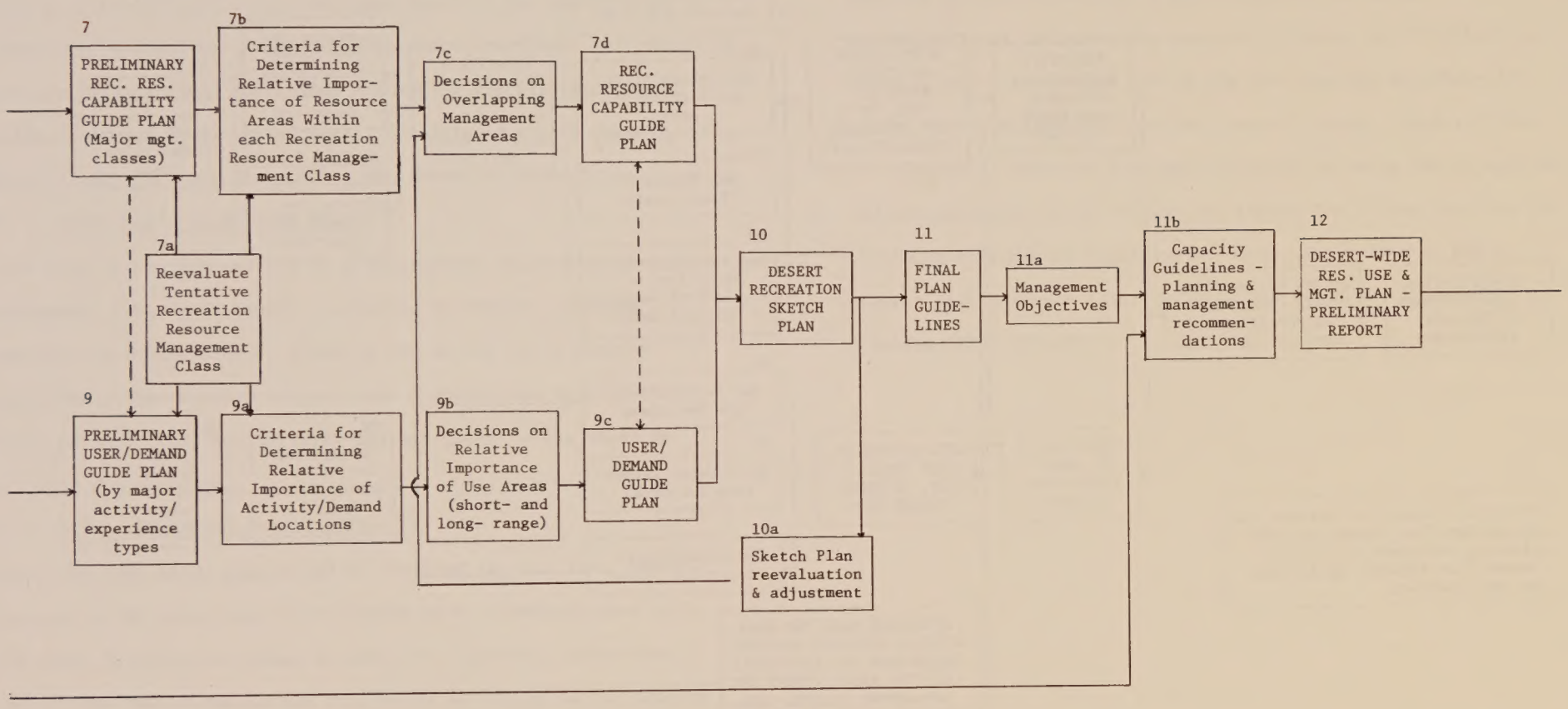
The following diagram, entitled "The Overall Recreation Plan and Carrying Capacity Framework", shows each of the steps recommended and indicates the sequence of steps and relationships between them. In essence, it is the work program for Phase II of the Desert Recreation Carrying Capacity Study. Each step in the diagram is numbered for easy reference in using the procedures and methodologies which follow. At the bottom of the diagram, the six Overall Framework Steps are shown as they relate to BLM's present Unit Resource Analysis (URA) and Management Framework Planning (MFP) process.

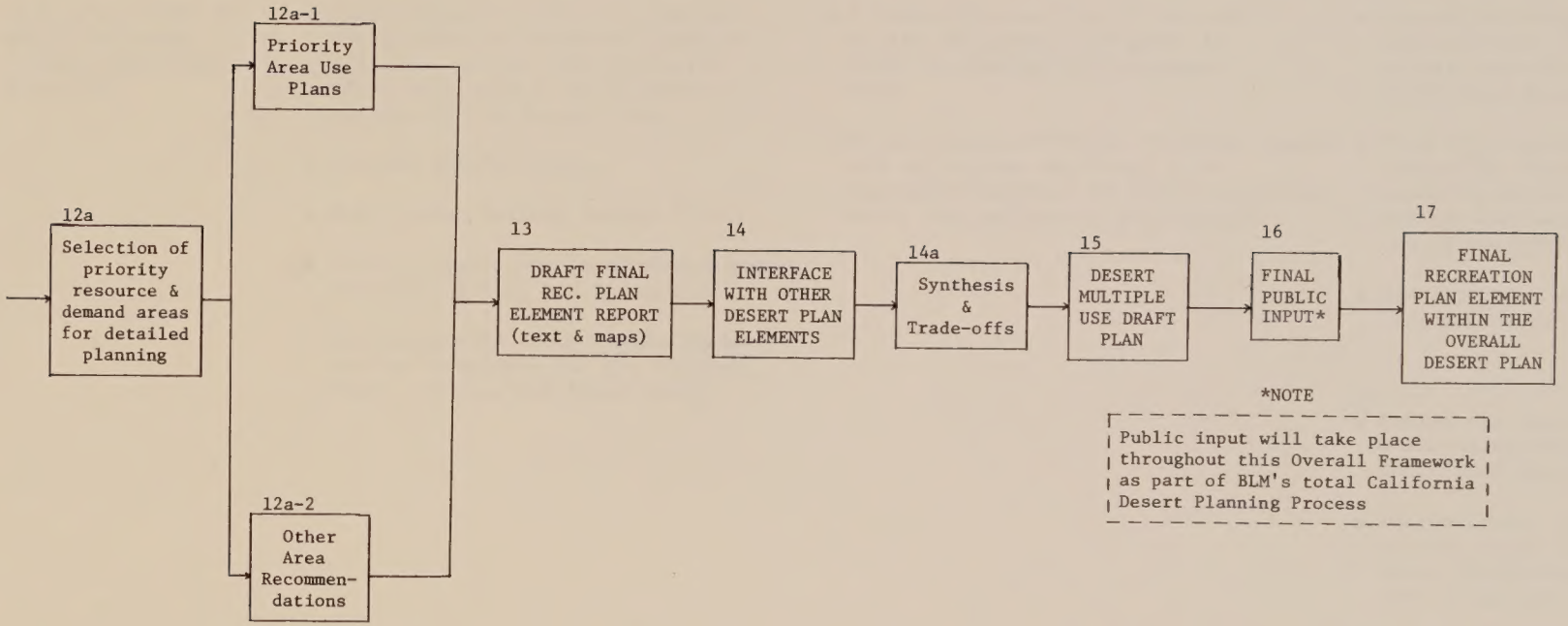
THE OVERALL RECREATION PLAN AND CARRYING CAPACITY FRAMEWORK

A RECREATION RESOURCE ALLOCATION AND CARRYING CAPACITY MODEL


1
CLARIFICATION OF INSTITUTIONAL GUIDELINES/ CONSTRAINTS
2
REVIEW OF EMPIRICAL DATA REGARDING CALIFORNIA DESERT USERS AND RESOURCES
3
TENTATIVE RECREATION RESOURCE MANAGEMENT CLASSES
4
CONSIDERATION OF USER/ EXPERIENCE CLASSES
6
APPLICATION OF STUDY RESULTS - PREP. OF REC. RESOURCE CAPABILITY MAPS
6a
Map non-BLM Areas
6b
Map Interpretive and Sightseeing Areas
6c
Map Wildland Study Areas
6d
Map Environmentally Sensitive, & Significant Natural & Cultural Areas
6e
Identify & Map Potential Areas for General Rec. & OHV Play/ Competition
6e-1
Criteria for OHV Play/ Competition Area Selection
6e-2
Criteria for General Recreation Area Selection
6e-3
Map Capable Gen. Rec. & OHV Play/ Competition Areas
8
APPLICATION OF STUDY RESULTS - PREP. OF USER/ DEMAND MAPS
8a
Map Past Recreation Use Areas
8b
Map Present Recreation Use Areas
8c
Determine Future Recreation Demand
8d
Assumptions for Determining Future Demand Locations
8e
Map Future Recreation Demand Locations
5
DETERMINE NEED FOR MORE DETAILED CARRYING CAPACITY GUIDELINES FOR INDIVIDUAL ACTIVITY AREAS WITHIN THE MANAGEMENT CLASSES (SEE DETAILED CARRYING CAPACITY METHODOLOGY, CH. 5, PG.57)
Continual interaction between the Recreation Plan Process and the planning processes of all other Desert Plan Elements is implicit in this Framework
URA STEPS 1,2,3
URA STEP 4 (Opportunization)
INITIAL PLANNING GUIDELINES

THE OVERALL RECREATION PLAN AND CARRYING CAPACITY FRAMEWORK (CONT.)




12a-1
Priority Area Use Plans
12a
Selection of priority resource & demand areas for detailed planning
12a-2
Other Area Recommen-dations
13
DRAFT FINAL REC. PLAN ELEMENT REPORT (text & maps)
14
INTERFACE WITH OTHER DESERT PLAN ELEMENTS
14a
Synthesis & Trade-offs
15
DESERT MULTIPLE USE DRAFT PLAN
16
FINAL PUBLIC INPUT*
17
FINAL RECREATION PLAN ELEMENT WITHIN THE OVERALL DESERT PLAN
*NOTE
Public input will take place throughout this Overall Framework as part of BLM's total California Desert Planning Process

FRAMEWORK STEPS (Refer to Framework Flowchart)	INPUTS	OUTPUTS	PROCEDURES
1. CLARIFICATION OF INSTITUTIONAL GUIDELINES/CONSTRAINTS	• Comprehensive review of existing legislation to determine mandated policies, goals, and objectives which will affect the Recreation element of the Desert Plan. • Present BLM Policies. • BLM Program Outlook Guides (POGs) • State, county, and local government policies, goals, and objectives. • Considerations about future legislative directives (at the Federal, State, county, and local level).	• A comprehensive list of current policy statements and goals to guide Recreation Plan preparation. • An indication of which policies, goals and objectives are fixed (i.e., expressly mandated by legislation) and which are incidental and implied.	• Review existing legislation and other institutional constraints which will affect recreational usage within the California Desert Conservation Area (CDCA) • From this review and from the inputs listed for Step #1, prepare a list of mandated policy statements and other policy statements regarding recreational use of the CDCA. • Use this list to write preliminary goal statements for the Recreation Plan. • Review the list of goals for comprehensiveness and, if necessary, list additional goals. • Include these preliminary goals in a working paper and circulate among the Desert Recreation Planning Staff (DRPS) for review and comment. • Make adjustments.
2. REVIEW OF EMPIRICAL DATA REGARDING CALIFORNIA DESERT USERS AND RESOURCES	• Results of the Organized Recreation Group Use study. • Results of the on-site recreation use study. • Results of the public opinion surveys.	• Additional knowledge about the types of desert recreationists and resources.	• Review the DPS and other studies (See Chapter 6) for additional information about the various California Desert recreationists and resources.

FRAMEWORK STEPS (Refer to Framework Flowchart)	INPUTS	OUTPUTS	PROCEDURES
#1 (continued)	• Results of the Recreation Supply: Demand Study. • Results of the psycho-social satisfaction study. • Other DPS studies/contracts (See Chapter 6)		
3. TENTATIVE RECREATION RESOURCE MANAGEMENT CLASSES	• Outputs of Steps 1, 2 and 4. • Further review and evaluation of current classes in use by BLM, BOR and others. • Results of the Desert Planning Staff (DPS) studies regarding user attitudes and opinions, recreation demands, culturally significant areas, environmentally sensitive areas; and an overall knowledge about user expectations in the California Desert. (See Chapter 6)	• Tentative management classes. • A description of the intent of each class. • A list of goals for each management class. • A list of representative recreation activities for each class. • A list of management implications for each class.	• Examine and list possible recreation management classes, including those which have been used in the past (e.g. BOR recreation classes, present DPS classifications, and recreation areas in the CFR). • Review their appropriateness for use in California Desert Recreation Plan. • From knowledge of the various user situations, management goals and objectives, DPS study results, and outputs of Step #2, review and reevaluate the Tentative Recreation Resource Management Classes presented in Chapter 6. • Use the format in Chapter 6 and add a column on management implications. • Circulate the recreation management classes and their descriptions to DRPS for review and comment. • Make adjustments
4. CONSIDERATION OF USER/EXPERIENCE CLASSES	• Results of the Organized Recreational Group Use study.	• A comprehensive list of the various recreation activities which occur in the California Desert.	• Using the inputs of Step #3, and from knowledge of recreation use in the CDCA, prepare a comprehensive list of recreation activities appropriate for Desert-

FRAMEWORK STEPS (Refer to Framework Flowchart)	INPUTS	OUTPUTS	PROCEDURES
#4 (continued)	• Results of the on-site recreation use study. • Results of the public opinion surveys. • Desert Plan Advisory Committee reports. • Results of the Recreation Supply: Demand Study. • Results of the history of recreation in the Desert study. • Results of the psycho-social satisfaction study. • California Desert Recreational Carrying Capacity Advisory Group Workshop Meeting Summary Reports and Memoranda.	• An understanding of the various Desert activities, user situations and expectations. • Identification of past and potential recreation user conflict situations.	wide planning (See the preliminary list of desert recreation activities for the California Desert in Chapter 6). • From this list, and the inputs for Step #4, identify different user experience situations and possible use conflicts. Prepare a working paper for DPS review and comment.
5. DETERMINE THE NEED FOR MORE DETAILED CARRYING CAPACITY GUIDELINES FOR INDIVIDUAL ACTIVITY AREAS WITHIN THE MANAGEMENT CLASSES; SELECT PRIORITY AREAS FOR STUDY			• FOLLOW STEPS 1 THROUGH 5 DESCRIBED IN THE DETAILED CARRYING CAPACITY METHODOLOGY. (See Pages 61 to 66)
6. APPLICATION OF STUDY RESULTS - PREPARATION OF RECREATION RESOURCE CAPABILITY MAPS	(Inputs, outputs, and procedures for the individual tasks of Step 6 are shown on the following seven pages.)		

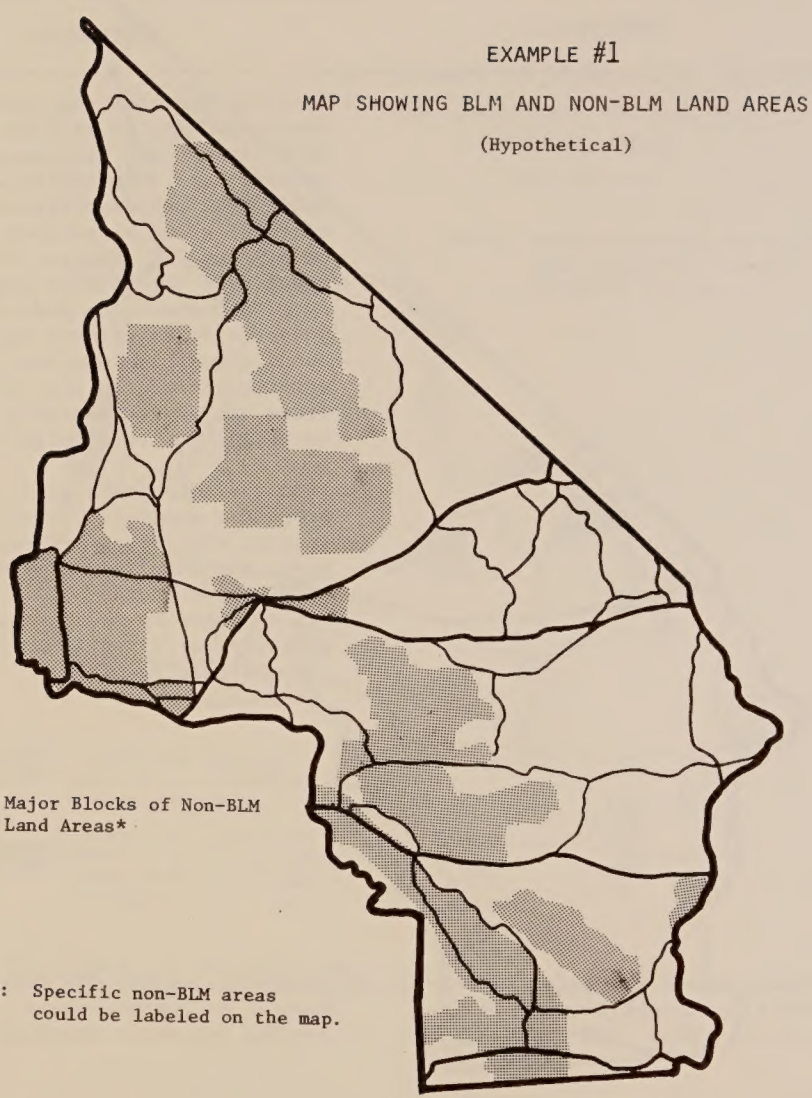
FRAMEWORK STEPS (Refer to Framework Flowchart)	INPUTS	OUTPUTS	PROCEDURES
6a MAP BLM AND NON-BLM AREAS	• Maps showing those areas which are not managed by BLM. • Map showing new BLM areas to be acquired and areas to be taken out of BLM management.	• Map showing BLM and non-BLM areas (See Example #1).	• Prepare a desert-wide overlay map at a scale of 1:250,000 (1"= approximately 4 miles) on clear acetate showing those areas which are not managed by BLM. (These areas would include military areas, State parks, Federal non-BLM land, private land, etc.) Areas to be taken out of BLM management and areas to be obtained should also be identified. (See Example #1.) NOTE: Unless otherwise noted, all desert-wide maps should be at a scale of 1:250,000.
6b MAP INTERPRETIVE AND SIGHTSEEING AREAS	• Information regarding and maps showing interpretive and sightseeing areas.	• Map showing documented interpretive and sightseeing areas.	• Prepare a desert-wide overlay map on clear acetate showing interpretive and sightseeing areas.
6c MAP WILDLAND AREAS	• Criteria for identifying and evaluating wildland areas within the California Desert.	• Map showing wildland areas in the California Desert (See Example #2).	• Prepare a desert-wide overlay map on clear acetate showing selected wildland areas within the California Desert. (See Example #2) NOTE: An alternative would be to identify on the map all of the candidate wilderness study areas & their suitability evaluation scores; this way, the less suitable wilderness areas could be evaluated for another management classification.
6d MAP ENVIRONMENTALLY SENSITIVE, & SIGNIFICANT NATURAL & CULTURAL AREAS	• Inventory of the botanical resources of the California Desert. • Results of the desert-wide vegetation study.	• Map showing environmentally sensitive, and significant natural and cultural areas within the California Desert. • Descriptions for each of the identified areas.	• Examine the findings, conclusions and end products of the DPS studies/contracts listed as inputs to Step 6d. Meet with DPS Staff people, if necessary, to clarify the results and information in the reports.

(Continued on Page 36)

EXAMPLE #1

MAP SHOWING BLM AND NON-BLM LAND AREAS

(Hypothetical)



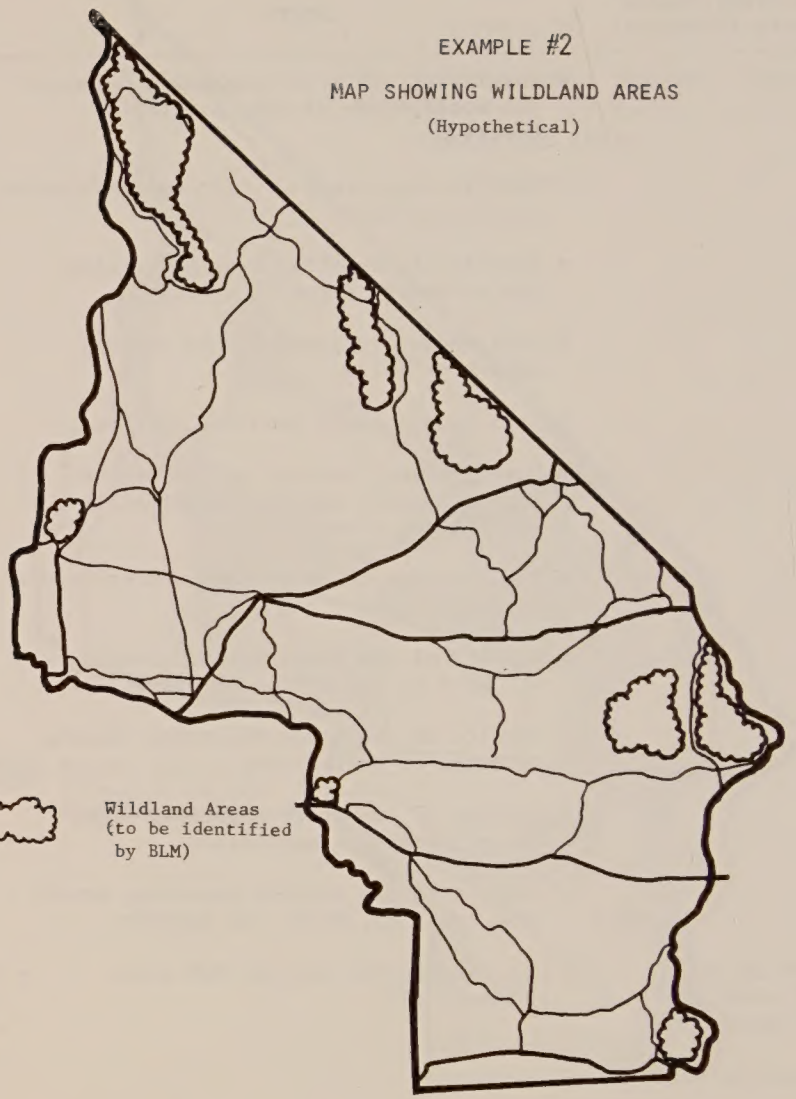
Major Blocks of Non-BLM Land Areas*

*NOTE: Specific non-BLM areas could be labeled on the map.

EXAMPLE #2

MAP SHOWING WILDLAND AREAS

(Hypothetical)



Wildland Areas (to be identified by BLM)

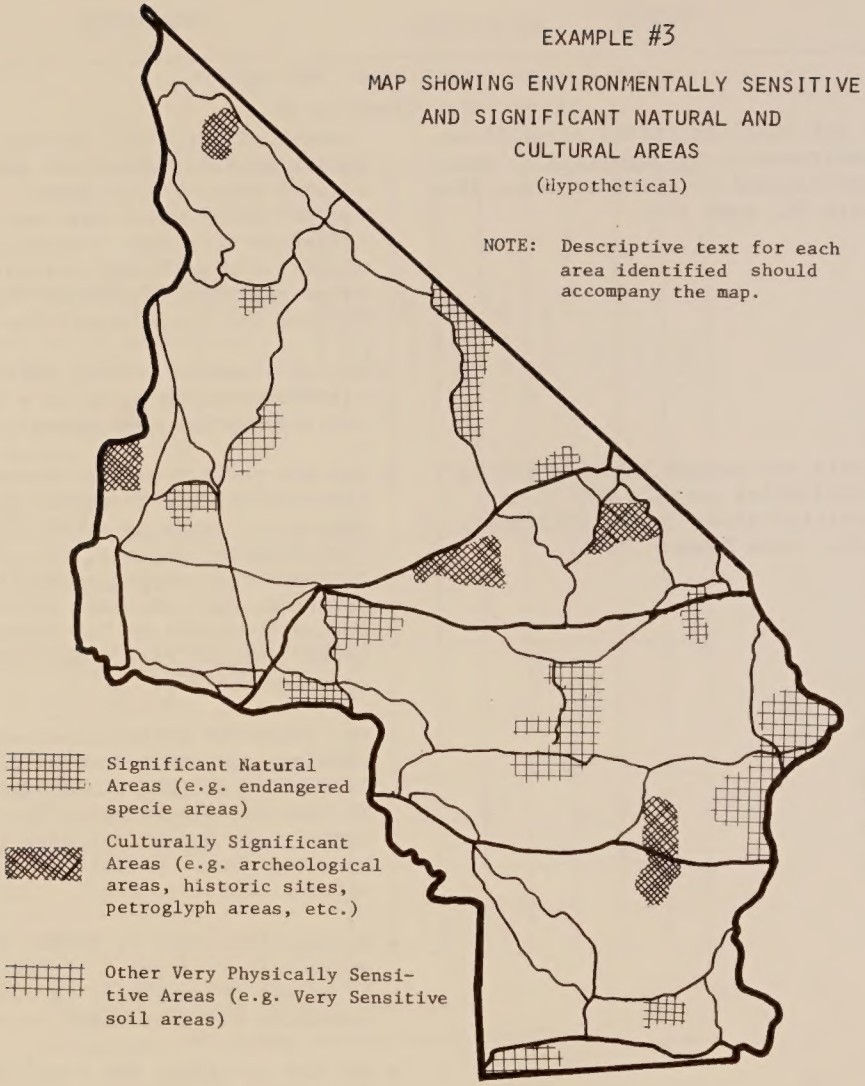
FRAMEWORK STEPS (Refer to Framework Flowchart)	INPUTS	OUTPUTS	PROCEDURES
#6d (continued)	• Results of the study regarding climatic characteristics of the California Desert. • Maps showing areas of rare and endangered plant species. • Results of the Effects of Recreation Use on Desert Vegetation Study. • Soil inventory results/maps showing sensitive soils. • Soil Impact Study results. • Maps showing historic sites, archeological sites, and other culturally significant areas. • Maps showing areas of rare and endangered wildlife. • Results of the study regarding impacts of OHV's on California Desert wildlife. • Results of the study regarding impacts of noise on vertebrates. • Results of the study regarding significant/sensitive amphibians. • Results of the studies regarding sensitive reptiles, birds and mammals.		• From the findings and conclusions of these studies, it will be possible for DRPS (or the DPS lead personnel) to prepare overlay maps identifying environmentally sensitive, and significant natural and cultural areas based upon the results of each study (See Chapter 6). Where the results of the studies are site-specific, an effort should be made to apply them to desert-wide situations and map applicable areas. Descriptions also should be written explaining why the identified areas are environmentally sensitive or of natural or cultural significance. • From the above-mentioned overlay maps, prepare a composite overlay map on clear acetate showing environmentally sensitive, and significant natural and cultural areas in the CDCA. It is desirable to describe which areas are more sensitive or significant than others (see Example #3).
6e IDENTIFY AND MAP CAPABLE AREAS FOR GENERAL RECREATION (Continued on page 38)	• Map showing BLM and non-BLM areas (Example #1).	• Map showing capable General Recreation/OHV Play/Competition areas (i.e. a map showing those BLM areas which	• Determine capable OHV Play/Competition & General Recreation areas by combining the overlay map which shows non-BLM areas

EXAMPLE #3

MAP SHOWING ENVIRONMENTALLY SENSITIVE AND SIGNIFICANT NATURAL AND CULTURAL AREAS

(Hypothetical)

NOTE: Descriptive text for each area identified should accompany the map.



Significant Natural Areas (e.g. endangered specie areas)

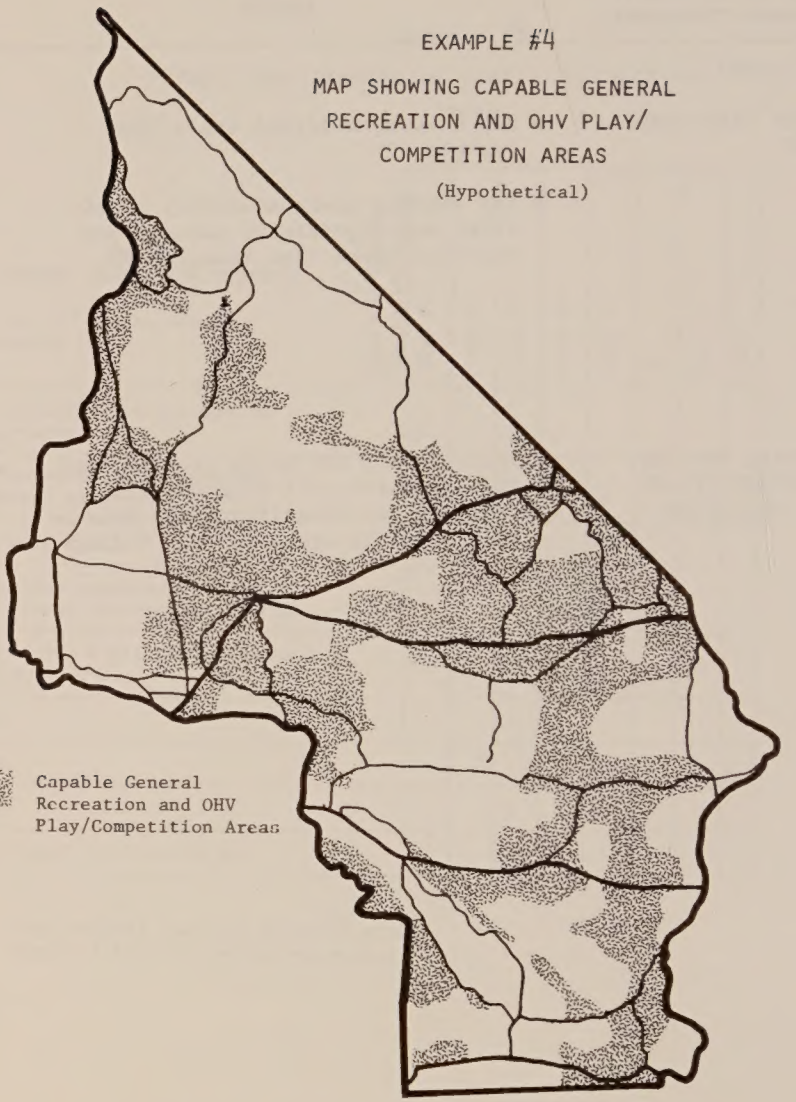
Culturally Significant Areas (e.g. archeological areas, historic sites, petroglyph areas, etc.)

Other Very Physically Sensitive Areas (e.g. Very Sensitive soil areas)

EXAMPLE #4

MAP SHOWING CAPABLE GENERAL RECREATION AND OHV PLAY/ COMPETITION AREAS

(Hypothetical)



Capable General Recreation and OHV Play/Competition Areas

FRAMEWORK STEPS (Refer to Framework Flowchart)	INPUTS	OUTPUTS	PROCEDURES
#6e (continued)			
AND OHV PLAY/COMPETITION	• Map showing wildland areas (See Example #2). • Map showing environmentally sensitive, and significant natural and cultural areas (See Example #3).	have not been identified as wildland or environmentally sensitive or significant natural or cultural areas (See Example #4, page 37).	(output of Step 4b), and the map showing environmentally sensitive and significant natural and cultural areas. The remaining BLM areas which have not been identified as wildland or environmentally sensitive/significant natural & cultural areas represent potential General Recreation or OHV Play/Competition Areas. • Map the capable General Recreation/OHV Play/Competition areas on a clear acetate overlay (see Example #4, page 37).
6e-1 CRITERIA FOR OHV PLAY/COMPETITION AREA SELECTION	• Information, DPS study results, and factors which will help establish criteria for identifying and evaluating suitable areas for OHV riding.	• Criteria and method for identifying and evaluating capable OHV Play/Competition areas in the California Desert. (See Example #5.)	• Use the results of the studies regarding impacts of OHV's on desert wildlife, the impacts of noise on vertebrates, soil inventory and impacts, the effects of recreation on desert vegetation, user attitudes and opinions, and other information to establish "attractiveness criteria" for OHV Play/Competition areas (see Example #5). • Use these OHV criteria to evaluate (score) each area identified as a "capable General Recreation and OHV Play/Competition area" in Step 6e (See Example #5). Delineate & number each individual area (all polygons) by using roads, political boundaries, natural features, etc. • Examine the array of scores & establish a minimum score (e.g. 5 of the 10 criteria) to be met by each area to qualify as a candidate OHV play/competition area. • Map the candidate OHV play/competition areas on a clear acetate overlay.

EXAMPLE #5

FORMAT FOR IDENTIFYING CAPABLE OHV PLAY/COMPETITION AREAS

EXAMPLE OHV CRITERIA (Mark an "X" in the block if the area:)	Possible ORV Areas	Area #1	Area #2	Area #3	Area #4	Area #5	Etc.	Etc.	Etc.
1. is already used for OHV riding		X			X				
2. is adjacent to an existing OHV area			X		X				
3. contains essential or outstanding OHV resources (sand dunes, dry lakes, etc.)		X			X				
4. provides opportunities for multiple OHV use		X							
5. is located within X miles of Freeway interchange			X		X				
6. is within X miles of a major urban area		X			X				
7. is in demand for OHV use					X				
8. Etc.			X						
Total Number of Criteria Met		4	3	0	6	0			

NOTE: The criteria could be weighted on the basis of their relative importance.

*Areas where OHV riding is the primary activity.

EXAMPLE #6

FORMAT FOR IDENTIFYING GENERAL RECREATION AREAS

EXAMPLE GENERAL RECREATION CRITERIA (Mark an "X" in the block if the area:)	Possible General Recreation Areas	Area #1	Area #2	Area #3	Area #4	Area #5	Etc.	Etc.	Etc.
1. is already used for general recreation		X		X	X				
2. is adjacent to an existing general recreation area		X		X		X			
3. is very scenic		X		X					
4. provides opportunities for many different recreation activities						X			
5. is within X miles of a major urban area				X					
6. Etc.				X					
7. Etc.						X			
8. Etc.				X					
Total Number of Criteria Met		3	0	6	1	3			

NOTE: The criteria could be weighted on the basis of their relative importance.

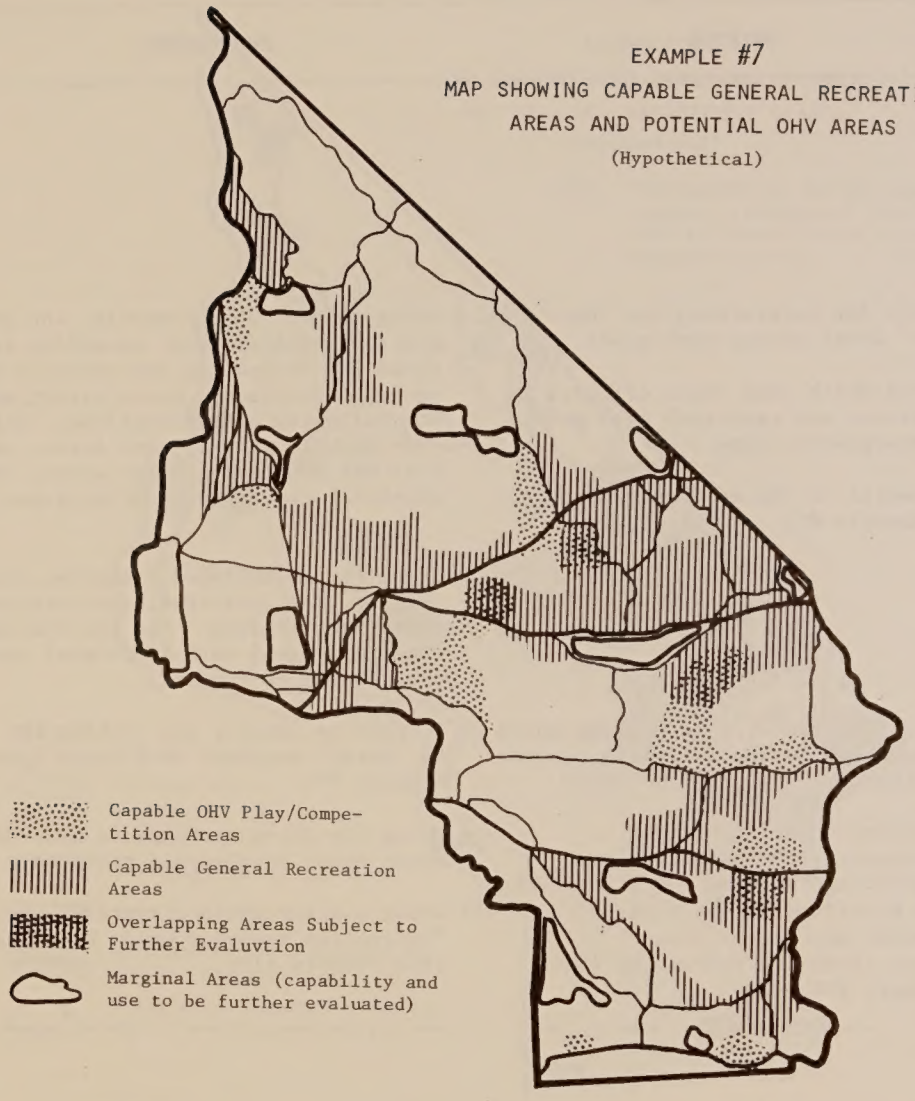
FRAMEWORK STEPS (Refer to Framework Flowchart)	INPUTS	OUTPUTS	PROCEDURES
6e-2 CRITERIA FOR GENERAL RECREATION AREAS	• Information, DPS study results, and factors which will help establish criteria for identifying and evaluating suitable areas for General Recreation.	• Criteria and system for identifying and evaluating General Recreation Areas in the California Desert (See Example #6, page 39).	• Use results of the DPS studies to establish criteria for General Recreation Areas (see Example #6, page 39). • Use these criteria to evaluate (score) each area identified as a "Capable General Recreation and OHV Play/Competition Area" in Step 6e. (NOTE: The same delineated areas evaluated for OHV Play/Competition suitability in 6e-1 would not be evaluated using the General Recreation criteria). • Examine the array of scores and establish a minimum score (e.g. 5 of the 10 criterion) to be met by each area to qualify as a candidate General Recreation Area.
6e-3 MAP CAPABLE GENERAL USE AREAS AND OHV PLAY/COMPETITION AREAS	• Outputs of Steps 6e-1 and 6e-2.	• Map showing capable general recreation areas and potential OHV Play/Competition areas. (See Example #7.)	• Map the candidate General Recreation Areas on the same overlay as the candidate OHV Areas were mapped in Step 6e-1. (See Example #7.) Also, identify areas where candidate OHV Areas and candidate General Recreation Areas overlap; "marginal areas" which did not meet the required number of OHV and General Recreation criteria should be identified.
7. PRELIMINARY RECREATIONAL RESOURCE CAPABILITY GUIDE PLAN	• Management Classes (Output of Step 3). • Map showing BLM and non-BLM land (See Example #1). • Map showing wildland areas (See Example #2).	• Preliminary Recreation Resource Capability Guide Plan (See Example #8).	• Using the information from the previous overlay maps prepare a preliminary Recreational Resource Capability Guide Plan Map. Combine the overlays & delineate preliminary management areas for the tentative classes (See Example #8). To do this, it may be necessary to prepare additional work maps and/or overlays.
7a REEVALUATE TENTATIVE RECREATION RESOURCE MANAGEMENT CLASSES	• Tentative Management Classes (Output of Step #3). • Outputs of Steps #6 and #8.	• Adjusted Management Classes.	• Reevaluate the tentative management classes, in light of the outputs of Steps #6 and #8, and make adjustments as necessary.

(Continued on Page 42)

EXAMPLE #7

MAP SHOWING CAPABLE GENERAL RECREATION AREAS AND POTENTIAL OHV AREAS

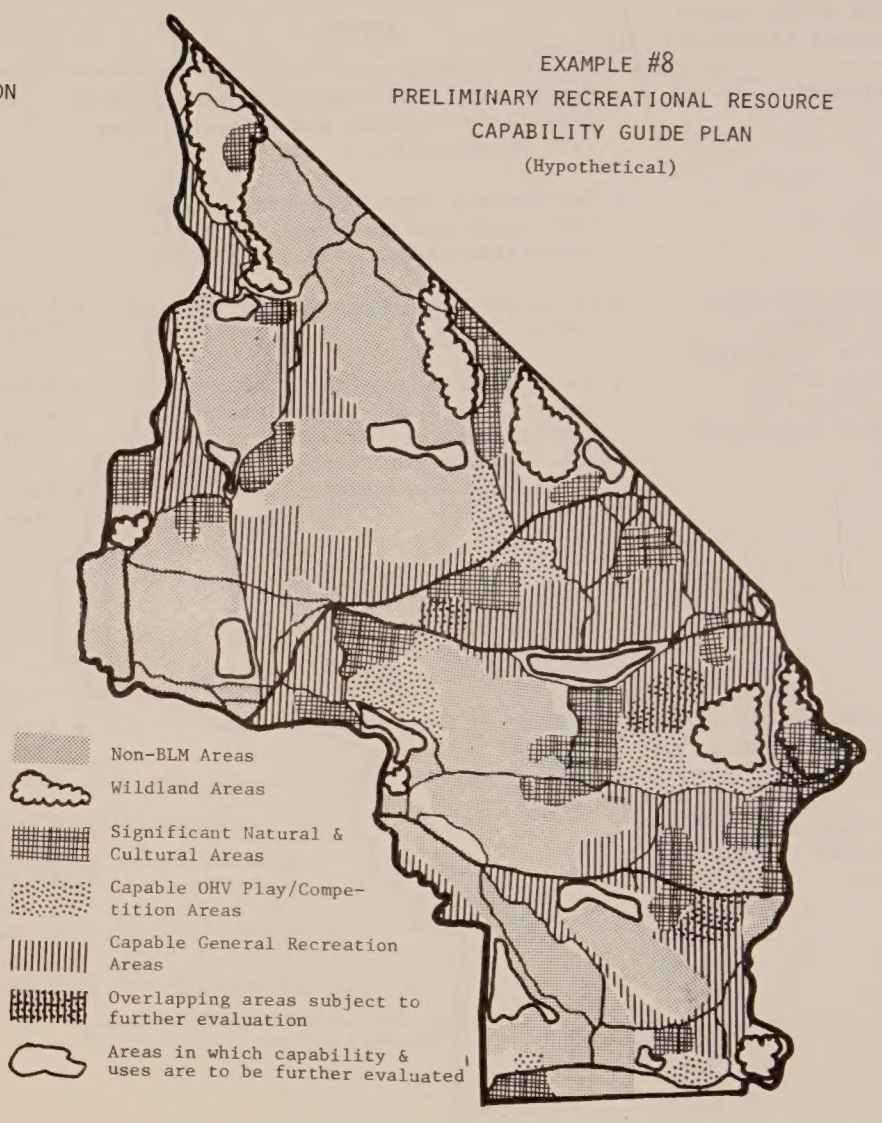
(Hypothetical)


Capable OHV Play/Competition Areas
Capable General Recreation Areas
Overlapping Areas Subject to Further Evaluvtion
Marginal Areas (capability and use to be further evaluated)

EXAMPLE #8

PRELIMINARY RECREATIONAL RESOURCE CAPABILITY GUIDE PLAN

(Hypothetical)


Non-BLM Areas
Wildland Areas
Significant Natural & Cultural Areas
Capable OHV Play/Competition Areas
Capable General Recreation Areas
Overlapping areas subject to further evaluation
Areas in which capability & uses are to be further evaluated

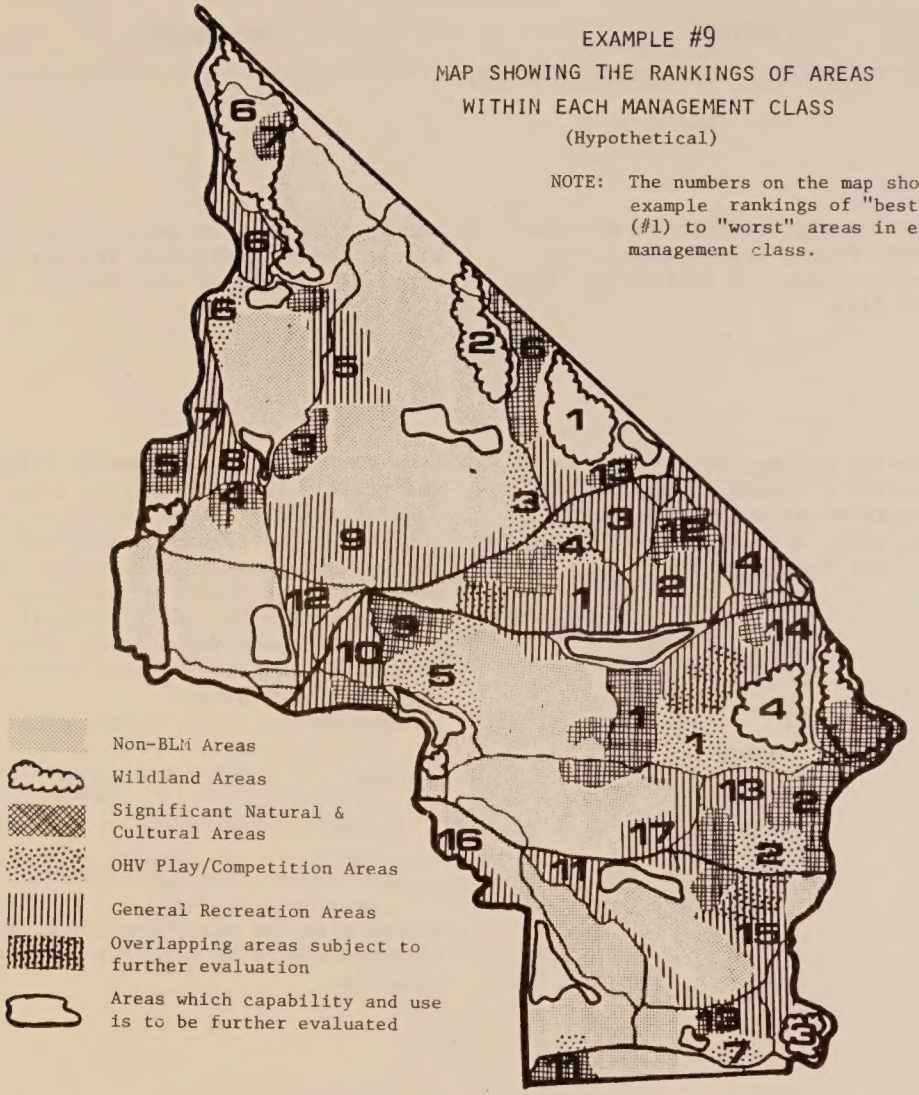
FRAMEWORK STEPS (Refer to Framework Flowchart)	INPUTS	OUTPUTS	PROCEDURES
#7a (continued)	• Map showing environmentally sensitive & significant natural and cultural areas (see Example #3). • Map showing capable general recreation areas and potential OHV Play/ Competition areas (See Example #7).		
7b CRITERIA FOR DETERMINING NATURAL RELATIVE IMPORTANCE OF AREAS WITHIN EACH RECREATION RESOURCE MANAGEMENT CLASS	• Criteria ratings from Steps 6e-1 and 6e-2. • Study results and other information which can be used as a basis for establishing criteria for evaluating the relative importance of areas within each management class.	• Criteria for determining the "best" to "worst" areas within each class. • A method which uses these criteria to evaluate and rank each area within each management class. • The results of the evaluation process (See Example #9).	• Using the DPS Study results, and other available information, establish criteria for evaluating the relative importance of individual areas within each of the following classifications: Significant Natural and Cultural Areas, potential OHV play/competition areas, and potential general recreation areas. • Using the established criteria, evaluate (score) each individual area within the management classes. Use the evaluation results to rank each individual area from "best" to "worst".
7c DECISIONS ON OVERLAPPING MANAGEMENT AREAS	• Outputs of Step #7. • Outputs of Step #7b.	• A recreation resource capability guide plan map showing the following management classes: 1. Wildland areas 2. Environmentally sensitive and significant natural & cultural areas 3. OHV Play/Competition areas 4. General Recreation areas 5. Areas closed to recreation (See Example #10)	• Prepare an overlay map ranking the "best" to "worst" areas of each class (see Example #9).
7d RECREATION RESOURCE CAPABILITY GUIDE PLAN			• Using the above rankings to make decisions about overlapping management areas. • Using a clear acetate overlay, prepare a "Recreation Resource Guide Plan Map" (See Example #10).

EXAMPLE #9

MAP SHOWING THE RANKINGS OF AREAS WITHIN EACH MANAGEMENT CLASS

(Hypothetical)

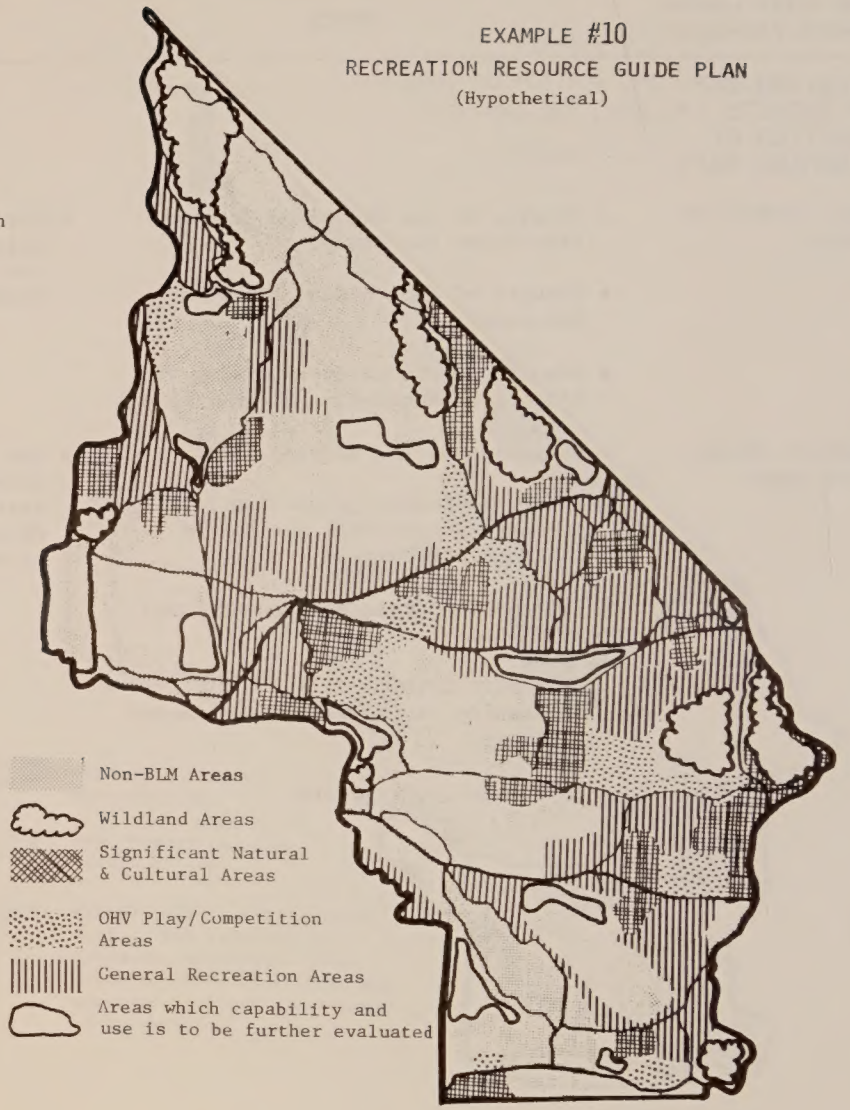
NOTE: The numbers on the map show example rankings of "best" (#1) to "worst" areas in each management class.


Non-BLM Areas
Wildland Areas
Significant Natural & Cultural Areas
OHV Play/Competition Areas
General Recreation Areas
Overlapping areas subject to further evaluation
Areas which capability and use is to be further evaluated

EXAMPLE #10

RECREATION RESOURCE GUIDE PLAN

(Hypothetical)

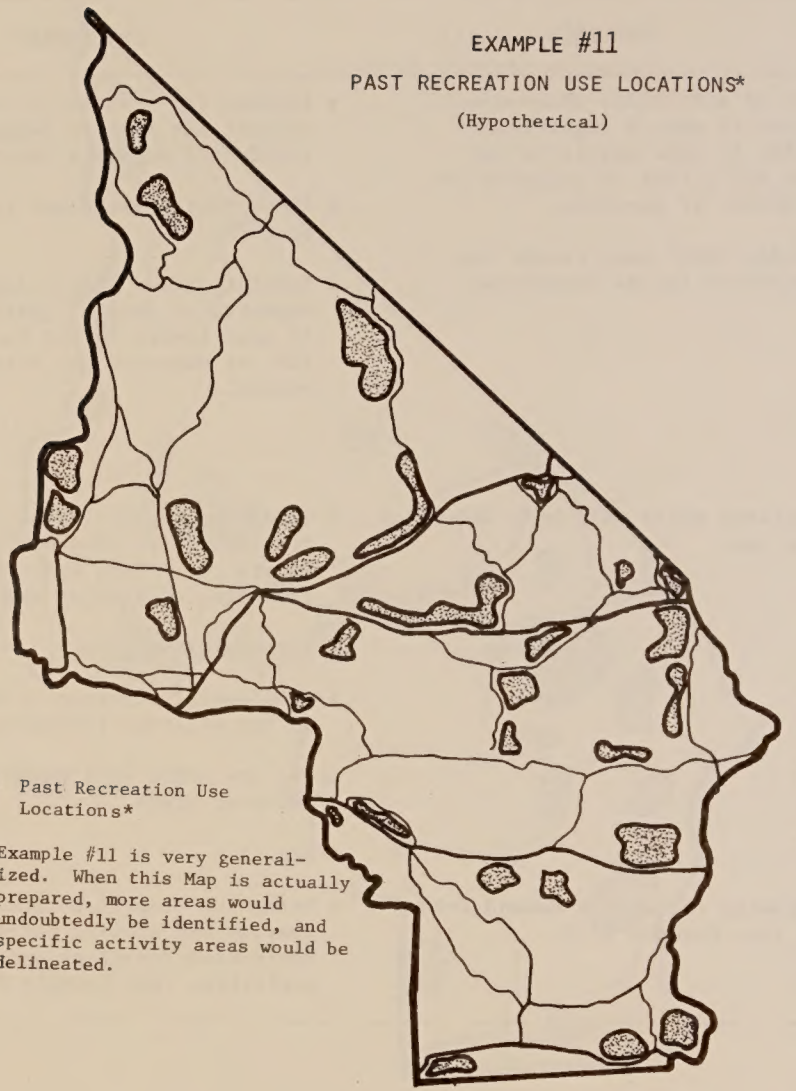

Non-BLM Areas
Wildland Areas
Significant Natural & Cultural Areas
OHV Play/Competition Areas
General Recreation Areas
Areas which capability and use is to be further evaluated

FRAMEWORK STEPS (Refer to Framework Flowchart)	INPUTS	OUTPUTS	PROCEDURES
8. APPLICATION OF STUDY RESULTS - PREPARATION OF USER/DEMAND MAPS			
8a MAP PAST RECREATION USE AREAS	• Results of the Organized Recreation Group Use Study. • Results of the On-Site Recreation Use Study. • Results of the study regarding the History of Recreation in the Desert.	• Map showing <u>past</u> recreation use area polygons, with a legend indicating the various types of activities (See Example #11).	• Map <u>past</u> recreation use area polygons, with a legend indicating the various types of activities (See Example #11).
8b MAP PRESENT RECREATION USE AREAS	• Recreational use polygon maps. • Other information regarding past and present recreational use in the California Desert. • Information regarding present user demands: 1. Public Opinion Polls 2. Results of the Recreation Demand Study • BLM aerial survey data.	• Map showing <u>present</u> recreation use areas, with a legend indicating the various types of activities, and showing high, medium and low levels of use (See Example #12).	• From the user surveys, aerial flights, and other user data, prepare a map showing <u>present</u> recreation use area polygons. The legend should indicate the various types of activities, and show different levels of use (see Example #12). Levels of intensity similar to those shown below could be determined from aerial user surveys, and other user data: Intense Use - over 1,000 annual VUD's/sq. mile Heavy Use - 501-1,000 annual VUD's/sq. mile Moderate - 25-500 annual VUD's/sq. mile Low - Under 25 annual VUD's/sq. mile • Within each use area, individual activity areas should be identified wherever possible.

EXAMPLE #11

PAST RECREATION USE LOCATIONS*

(Hypothetical)



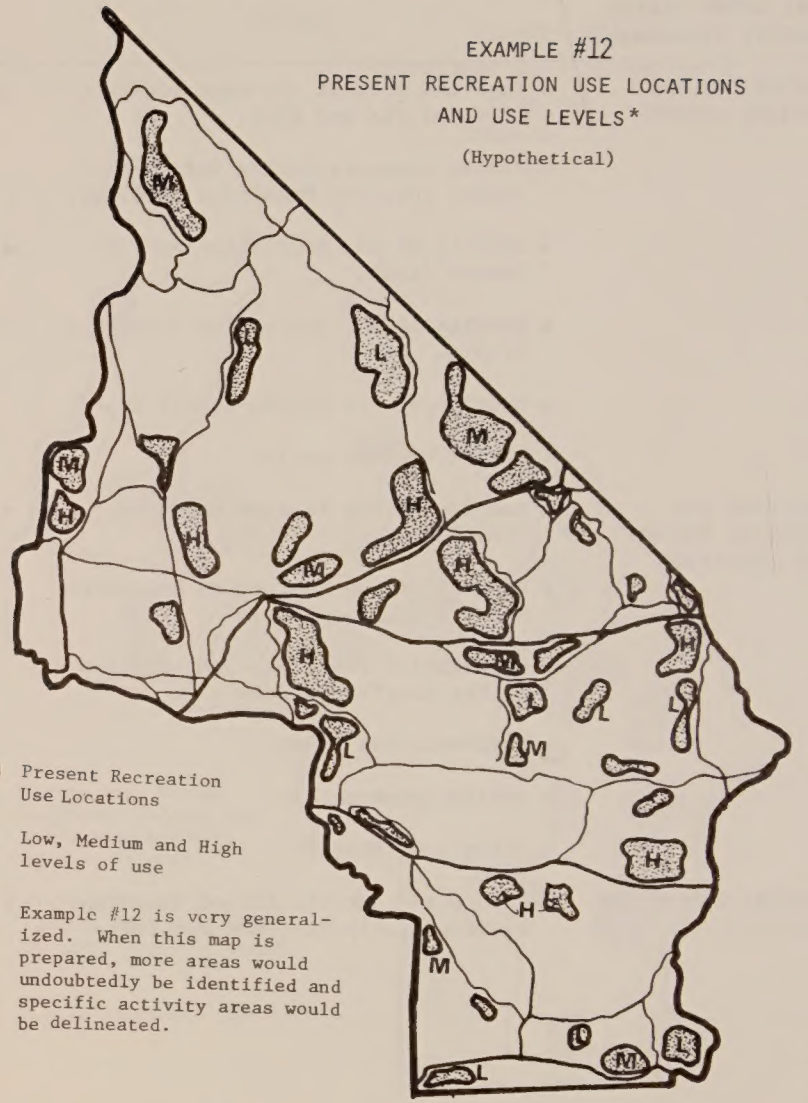
Past Recreation Use Locations*

*NOTE: Example #11 is very generalized. When this Map is actually prepared, more areas would undoubtedly be identified, and specific activity areas would be delineated.

EXAMPLE #12

PRESENT RECREATION USE LOCATIONS AND USE LEVELS*

(Hypothetical)



Present Recreation Use Locations

L,M,H Low, Medium and High levels of use

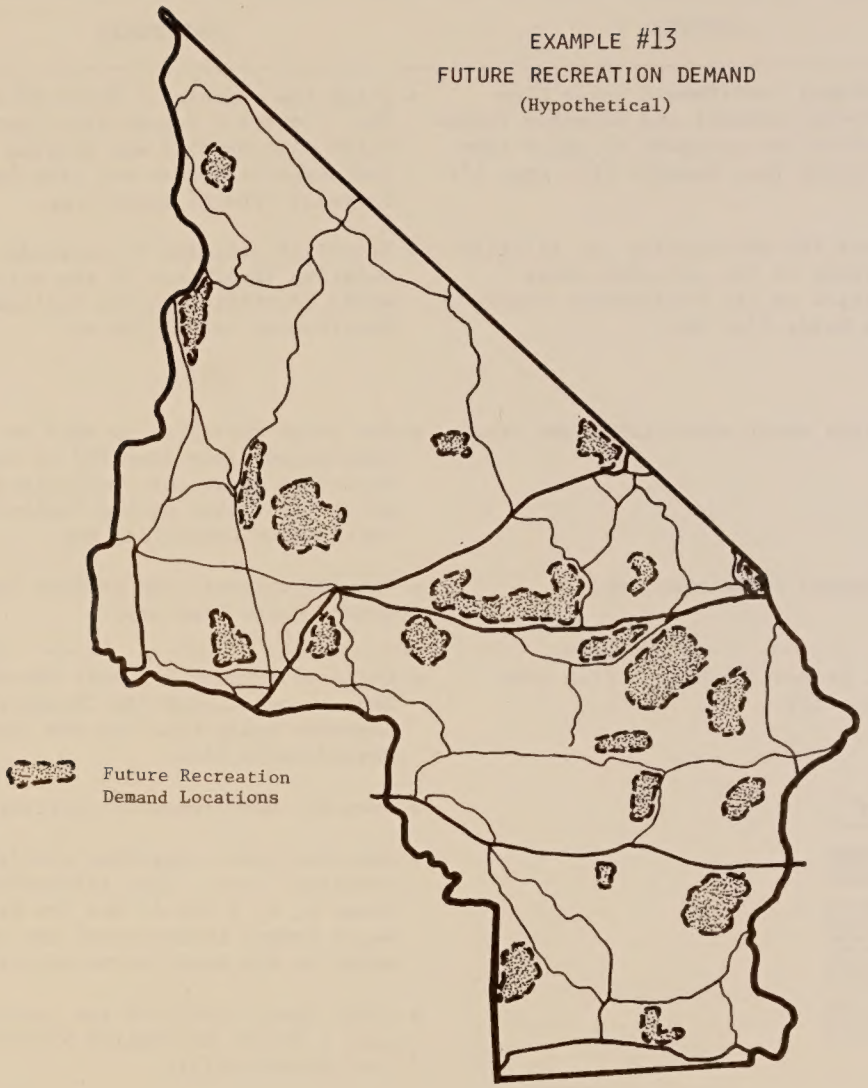
*NOTE: Example #12 is very generalized. When this map is prepared, more areas would undoubtedly be identified and specific activity areas would be delineated.

FRAMEWORK STEPS (Refer to Framework Flowchart)	INPUTS	OUTPUTS	PROCEDURES
8c DETERMINE FUTURE RECREATION DEMAND	• Past and present use maps (Outputs of steps #8a and #8b). • Public comments during California Desert Advisory Committee Meetings. • Results of the Recreation Supply: Demand Study. • Results of the Recreation Economics Study. • Results of the Psycho-Social Study. • Public opinion polls.	• A list of activities which are expected to show a significant increase in user levels in the future and a list of expected new activities, if possible. • Knowledge about past trends and and possible future tendencies.	• Examine the results of the past and present use maps to determine past use trends and possible future tendencies. • Also, review the other inputs listed for Step #8c. • Identify those activities which are expected to show a significant increase in user levels in the future and prepare list of expected new activities, if possible.
8d ASSUMPTIONS FOR DETERMINING FUTURE DEMAND LOCATIONS	• Results of the Recreation Supply: Demand Study. • Results of the Recreation Economics Study. • Information regarding compatible uses in the California Desert. • Psycho-Social Study. • Public comments. • Outputs of Step 6-c.	• Assumptions which will help determine future use.	• Using the inputs listed for Step #8, prepare a list of assumptions regarding future recreation use of the desert (assuming no plan or use restrictions). Example Assumptions: • People will continue to be attracted to the existing recreation areas. • New use areas will expand from existing areas. • Etc.
8e MAP FUTURE RECREATION DEMAND LOCATIONS	• Inputs and outputs listed for Step #8 (especially Step #8c and #8d).	• Map showing recreation demand locations (see Example #13).	• Using the Step #8 outputs, prepare an overlay map showing potential future recreation locations and related activities (see Example #13).

EXAMPLE #13

FUTURE RECREATION DEMAND

(Hypothetical)

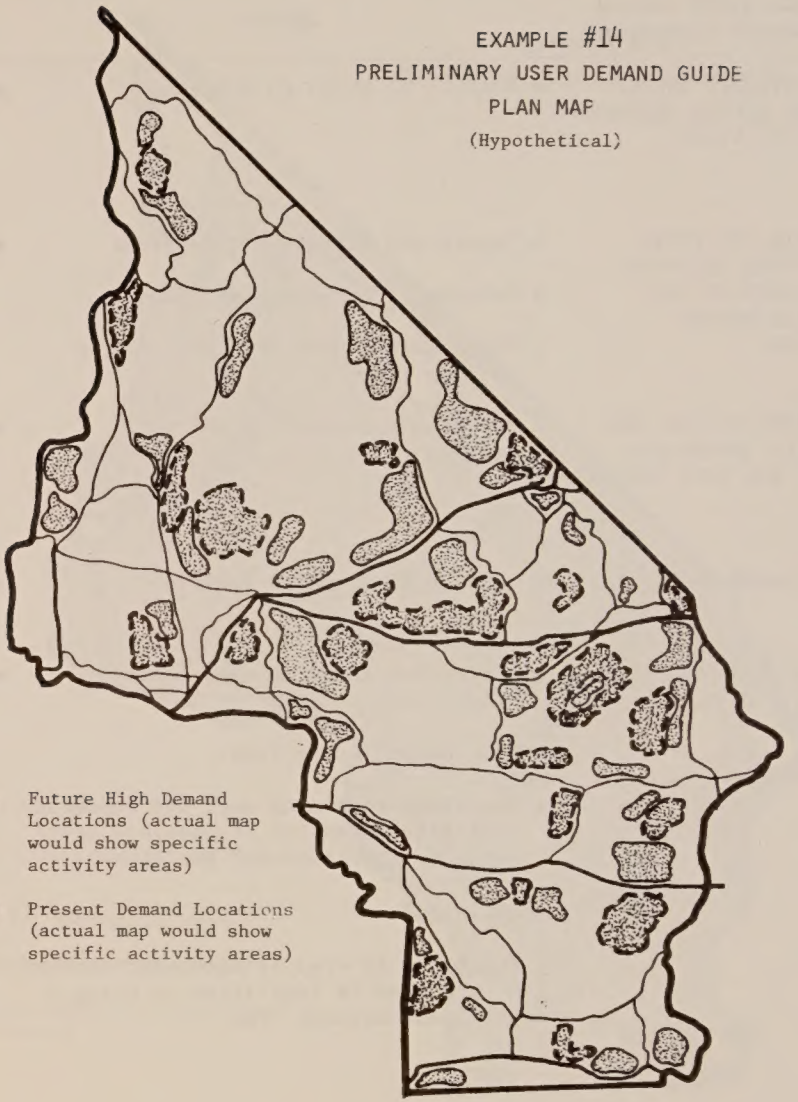


Future Recreation Demand Locations

EXAMPLE #14

PRELIMINARY USER DEMAND GUIDE PLAN MAP

(Hypothetical)



Future High Demand Locations (actual map would show specific activity areas)

Present Demand Locations (actual map would show specific activity areas)

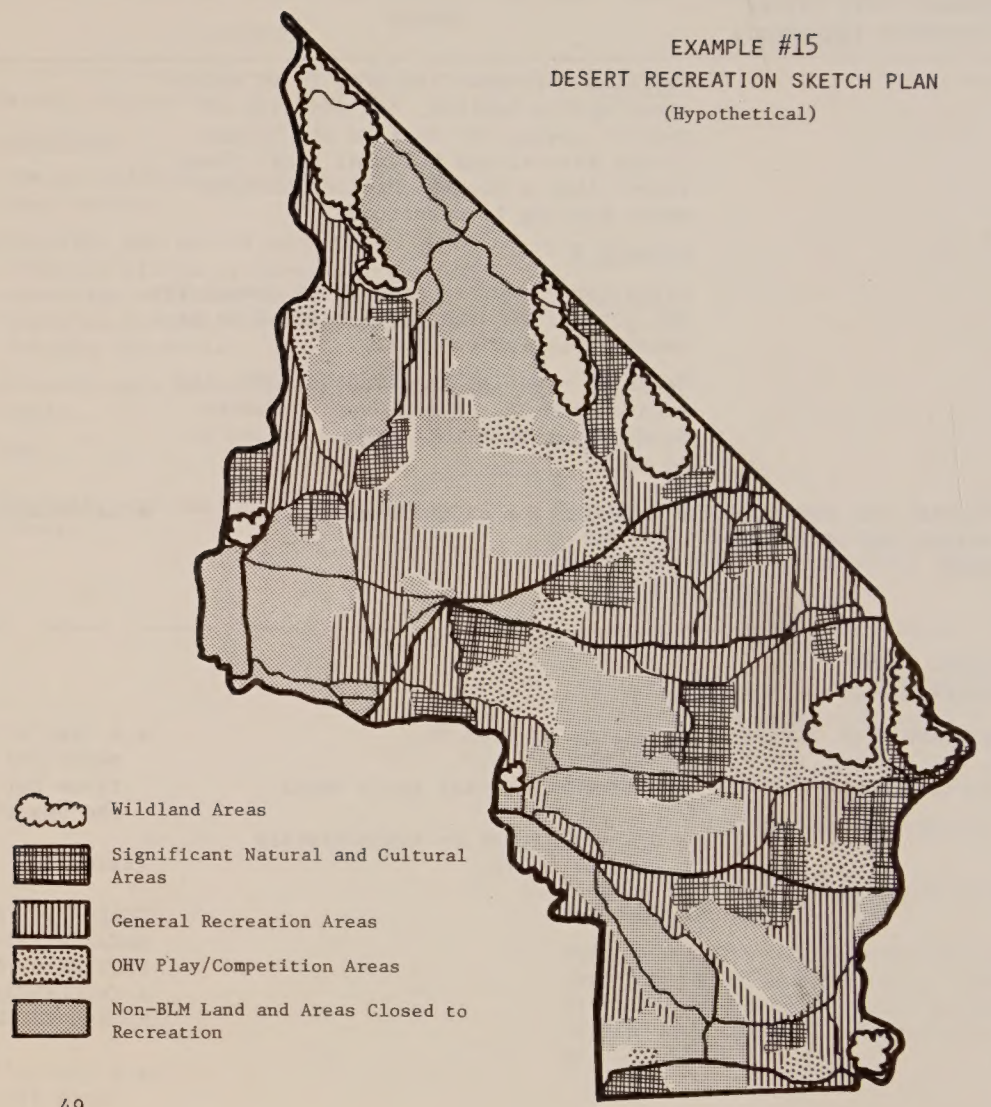
FRAMEWORK STEPS (Refer to Framework Flowchart)	INPUTS	OUTPUTS	PROCEDURES
9. PRELIMINARY USER/ DEMAND GUIDE PLAN (by major type)	• Outputs of Steps #8 and #8e.	• Preliminary User/Demand Guide Plan map showing present and possible future recreation use polygons by major type of activity (see Example #14, page 47).	• Using the outputs of Steps #8 through #8e, prepare a desert-wide User/Demand Guide Plan overlay map showing present and possible future use area polygons by major type of activities.
9a CRITERIA FOR DETERMINING THE RELATIVE IMPORTANCE OF THE ACTIVITY/DEMAND LOCATIONS	• Inputs and Outputs of Step #8d. • Outputs of the other #8 steps. • Preliminary Guide Plan Map (output of Step #9).	• Criteria for determining the relative importance of the activity areas identified on the Preliminary User/ Demand Guide Plan Map.	• Establish criteria to determine the relative importance of the activity areas identified on the Preliminary User/Demand Guide Plan map.
9b DECISIONS ON USE AREA RELATIVE IMPORTANCE (SHORT AND LONG RANGE)	• Management Classes (outputs of Step #3).	• Decisions about conflicting use areas.	• Use these criteria, as well as the assumptions from Step #8d to help make decisions about the conflicting use areas identified on the Preliminary User/Demand Guide Plan Map.
9c USER DEMAND GUIDE PLAN	• Outputs of Steps #9 and #9b.	• User/Demand Guide Plan map.	• Make adjustments and prepare the User/ Demand Guide Plan map.
10. DESERT RECREATION SKETCH PLAN	• Recreation Resource Capacility Guide Plan. • User Demand Guide Plan. • Decisions regarding user and resource conflicts (examples of possible user/ resource conflicts and decisions). Example A Situation - An area is in demand for hunting and also is identified as being a significant natural area.	• Desert Recreation Sketch Plan (See Example #15).	• Begin to prepare a Desert Sketch Plan Map, by overlaying the "Recreation Resource Guide Plan" on the "User/ Demand Guide Plan. • Identify user-resource conflict areas. • Make decisions regarding user/resource conflict areas. (The information from Steps 1, 2, 3 and 4, and the assumptions about future recreational use will help guide in the decision-making process. • After these conflicts are resolved, prepare a Desert Recreation Sketch Plan (see Example #15).

(Continued on Page 50)

EXAMPLE #15

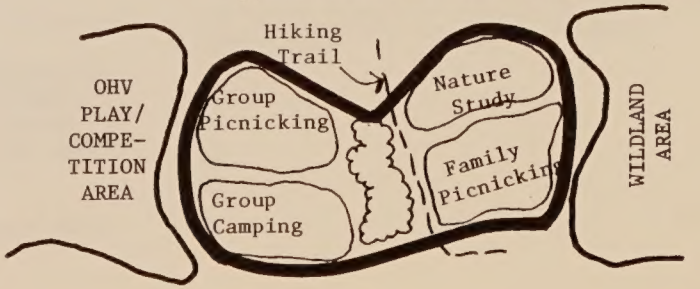
DESERT RECREATION SKETCH PLAN

(Hypothetical)


Wildland Areas
Significant Natural and Cultural Areas
General Recreation Areas
OHV Play/Competition Areas
Non-BLM Land and Areas Closed to Recreation

FRAMEWORK STEPS (Refer to Framework Flowchart)	INPUTS	OUTPUTS	PROCEDURES
	Decision - Because the area is an endangered specie habitat, the decision is made to assign the area to the "Significant Natural and Cultural Area" class rather than a General Recreation Area where hunting is permitted. Example B Situation - Another area is in demand for OHV play; this area is also found to be a General Recreation Area. Decision - Assign the area for OHV play because the Recreation Supply: Demand Study shows that this demand needed to be met.		
10a SKETCH PLAN REEVALUATION AND ADJUSTMENT	• Reevaluation of the Sketch Plan.	• Adjustments to the Sketch Plan.	• At this point BLM might want to reevaluate the Sketch Plan Map. This could be done through inhouse review by staff planners and/or other professionals outside of BLM.
11. FINAL PLAN GUIDELINES			
11a MANAGEMENT OBJECTIVES	• Outputs of Step #1. • Citizens/interest group input. • DPS experience in administering current policy.	• A list of refined goals and statements and detailed management objectives for the recreation element of the Desert Plan. (Example of one goal and its objectives) GOALS #1: MANAGE WILDLAND RECREATION AREAS WITHIN THE CALIFORNIA DESERT TO PROVIDE OPPORTUNITIES FOR SOLITUDE AND A CHALLENGING PRIMITIVE KIND OF RECREATIONAL EXPERIENCE. • A list of detailed management objectives (for each goal).	• Using the inputs listed for Step 11a, refine the goal statements established as a result of Step #1. • For each goal, prepare a list of detailed objectives (actions, techniques, ways) for achieving the goal.

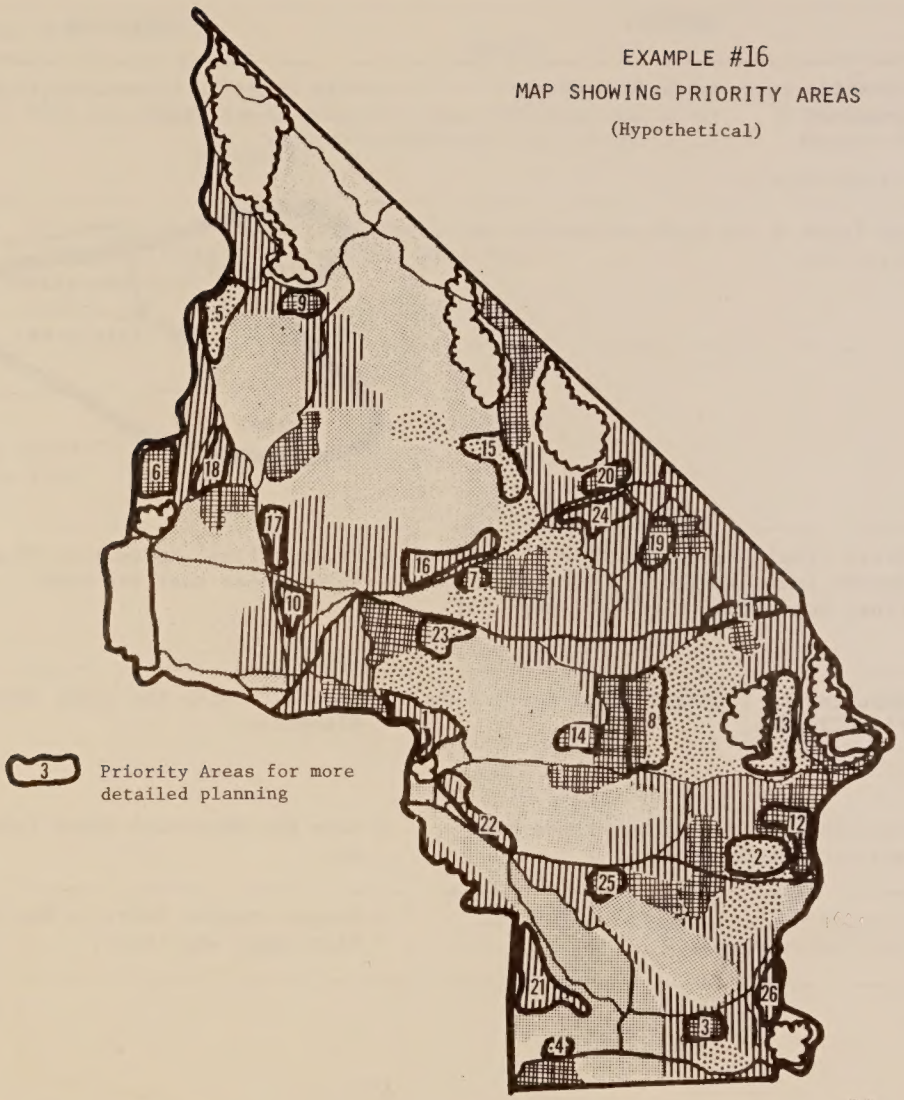
FRAMEWORK STEPS (Refer to Framework Flowchart)	INPUTS	OUTPUTS	PROCEDURES
#11a (continued)		(Example Objectives for Goal #1) Objectives: • Manage wildland areas for very low user levels. • Prohibit the use of motorized vehicles within wilderness areas and encourage wildland users to park vehicles in staging or buffer areas outside the area. • Provide only for very limited improvements. • Etc.	
11b CAPACITY GUIDELINES - PLANNING AND MANAGEMENT RECOMMENDATIONS	• Goals and management objectives (output of Step 11a). • Outputs of Steps #1, #2, #3, #4 and the other previous steps. • Results of the more detailed carrying capacity approach.	• Planning and management recommendations.	• From the inputs listed for Step #11b, prepare a planning and management recommendations (guidelines) for each management class. (Examples): 1. Use buffer areas between wildland and OHV play/competition areas. 2. Attempt to separate large group use areas from individual/small group area. 3. Restrict vehicular access within wildland areas. 4. Prepare detailed activity plans for priority use areas. 5. Use the results of the more detailed carrying capacity approach to help establish carrying capacity guidelines for the wildland and OHV activity areas.

FRAMEWORK STEPS (Refer to Framework Flowchart)	INPUTS	OUTPUTS	PROCEDURES
#11b (continued)			6. Etc. 7. Etc. *NOTE: Recommendations should be listed for each Management class.
12. DESERT-WIDE RECREATION USE AND MANAGEMENT PLAN - PRELIMINARY REPORT	• Adjusted Sketch Plan (Step #8c). • Final Plan Guidelines (Outputs of Steps #11a and 11b.	• Desert-Wide Recreation Use and Management Plan Preliminary Report.	• Prepare a Desert-wide Recreation Use and Management Plan Preliminary Report using the inputs listed for Step #12.
12a SELECTION OF PRIORITY RESOURCE AND DEMAND AREAS FOR DETAILED PLANNING	• Criteria for determining priority areas and for deciding whether areas are 1st, 2nd, or 3rd level priority.	• Map showing priority areas, and indicating priority groupings in 1st, 2nd, and 3rd level areas. (See Example #16).	• Establish criteria for determining priority resource and demand areas; priority areas require special planning and management. (Example Criteria) Priority areas - those areas which are: 1. High use areas, or 2. One-of-a-kind areas, or 3. Multiple recreation use areas, or 4. Very sensitive.
12a-1 PRIORITY AREA USE PLANS	• Outputs of Steps #11, #11a, and #11b. • Outputs of Steps #12 and #12a.	• Individual activity plan maps and written recommendations.	• Prepare individual activity plan map and written recommendations for the high priority areas. (Example Priority Area Use Plan For A Hypothetical General Recreation Area) 

EXAMPLE #16

MAP SHOWING PRIORITY AREAS

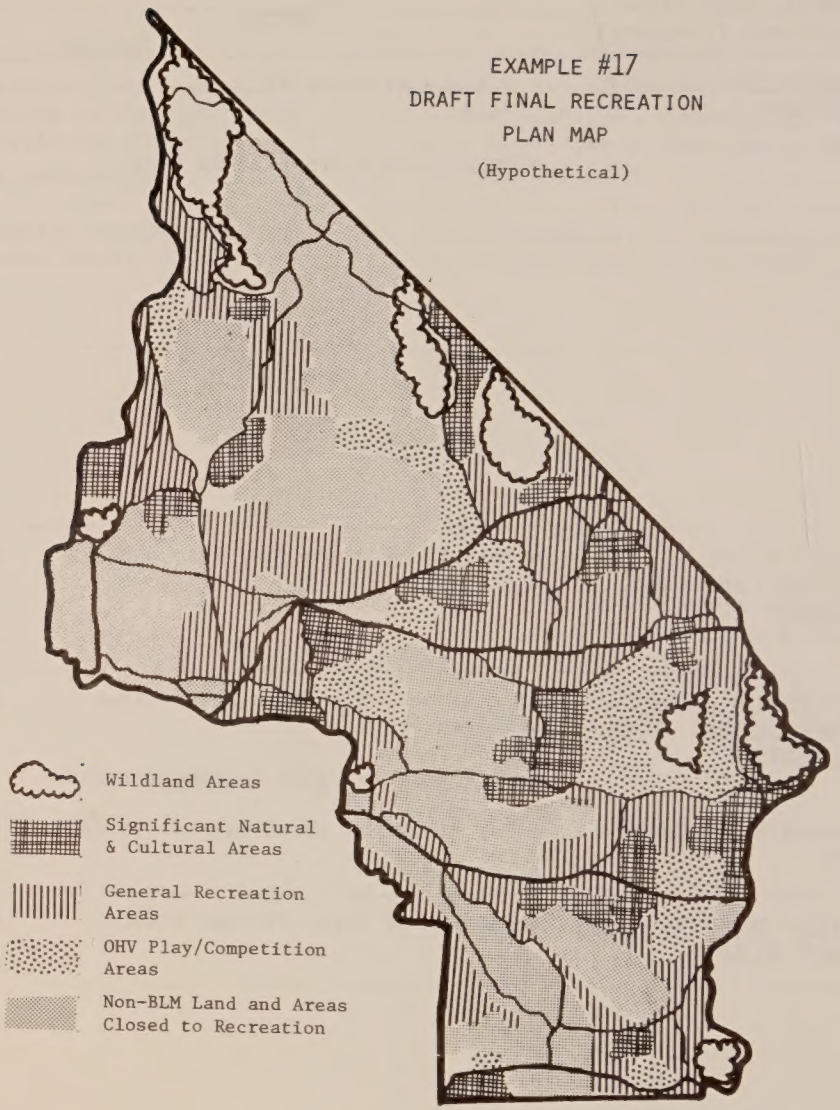
(Hypothetical)

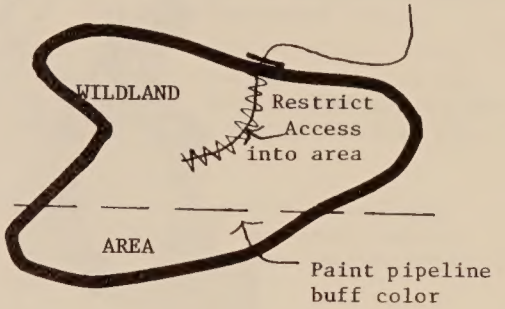


EXAMPLE #17

DRAFT FINAL RECREATION PLAN MAP

(Hypothetical)


Wildland Areas
Significant Natural & Cultural Areas
General Recreation Areas
OHV Play/Competition Areas
Non-BLM Land and Areas Closed to Recreation

FRAMEWORK STEPS (Refer to Framework Flowchart)	INPUTS	OUTPUTS	PROCEDURES
12a-2 OTHER AREA RECOMMENDATIONS	• Outputs of Steps #11, #11a, and #11b. • Outputs of Steps #12 and #12a.	• Specific recommendations where required.	• Make specific recommendations for other areas where required: (Example) 
13. DRAFT FINAL RECREATION PLAN ELEMENT REPORT (Text & Maps)	• Outputs of Steps #10, #11, and #12.	• Draft Final Recreation Plan Element Report (see Example #17 - Draft Final Recreation Plan Map, page 53).	• Prepare Final Recreation Plan Element Report with text and maps.
14. INTERFACE WITH OTHER DESERT PLAN ELEMENTS	• Interface with other Desert Plan Elements. • Rationale for plan recommendations.	• Adjustments to Draft Final Recreation Plan Element.	• Interface with the other Desert Plan Elements.
14a SYNTHESIS AND TRADE-OFFS	• Key decisions about use conflicts.	• Multiple use decisions, trade-offs and recommendations.	• Make key decisions about future desert use.
15. DESERT MULTIPLE USE DRAFT PLAN	• Results of Steps #14 and $14a.	• A draft multiple use plan for the California Desert.	• Prepare Desert Multiple Use Draft Plan (maps and text).

FRAMEWORK STEPS (Refer to Framework Flowchart)	INPUTS	OUTPUTS	PROCEDURES
16. FINAL PUBLIC INPUT	• Public meetings, workshop and other ways of seeking public input.	• Public reaction to the California Desert Multiple Use Plan. • Analysis of public input.	• Conduct meetings, surveys, etc. to gain direct public reaction to the multiple use plan.
17. FINAL RECREATION PLAN ELEMENT WITHIN THE OVERALL DESERT PLAN	• Adjustments to the Recreation Plan as a result of Step #16.	• Final Recreation Plan Element for the California Desert.	• Make adjustments, as necessary, to the Recreation Element of the Plan.

5 PART 2
DETAILED CARRYING CAPACITY METHODOLOGY

PART 2 - DETAILED CARRYING CAPACITY METHODOLOGY

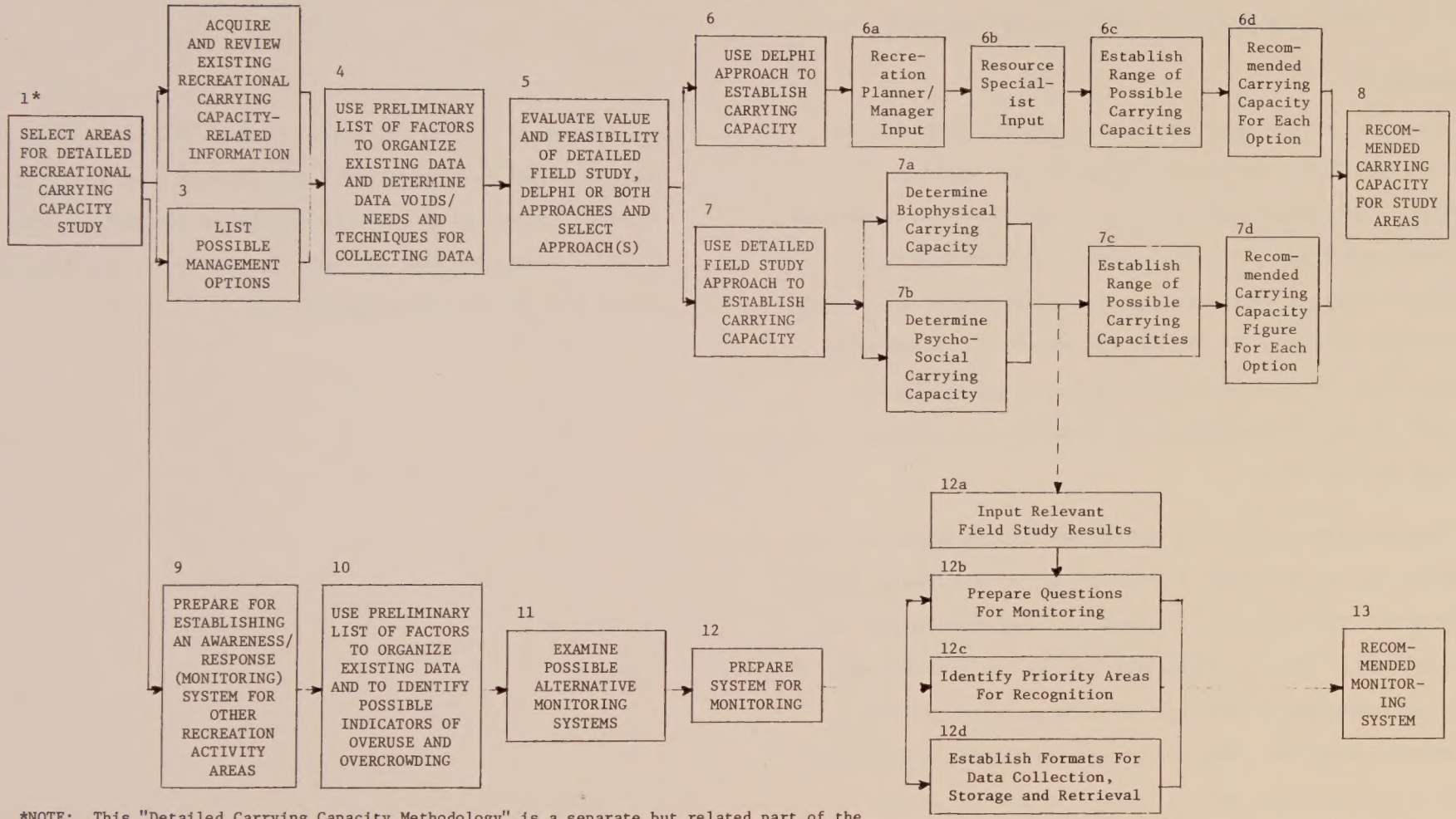
INTRODUCTION

The first part of the two-part recreational carrying capacity approach establishes the overall framework for capacity determination. This second part of the approach focuses on capacities for particular activity/area situations. This chapter describes a detailed carrying capacity methodology which can be carried out concurrently with Part 1 - The Overall Framework. It provides the basis for establishing carrying capacity guidelines for selected activity areas later in the Phase II Recreational Carrying Capacity Study.

The Detailed Carrying Capacity Methodology has two major sections. The first section describes the procedures for undertaking detailed carrying capacity studies of selected activity areas within the broad recreation resource management classes and provides the basis for establishing numerical carrying capacity guidelines. The second section describes the procedures for establishing and applying a recreational use and capacity monitoring system.

The diagram on the following page presents the steps in the Detailed Carrying Capacity Methodology. This process is a separate, but related, portion of the Overall Recreation Plan and Carrying Capacity Framework (Step #5, Page 27) and can be undertaken concurrently with the Overall Framework.

DETAILED CARRYING CAPACITY METHODOLOGY*


1*
SELECT AREAS FOR DETAILED RECREATIONAL CARRYING CAPACITY STUDY
2
ACQUIRE AND REVIEW EXISTING RECREATIONAL CARRYING CAPACITY-RELATED INFORMATION
3
LIST POSSIBLE MANAGEMENT OPTIONS
4
USE PRELIMINARY LIST OF FACTORS TO ORGANIZE EXISTING DATA AND DETERMINE DATA VOIDS/ NEEDS AND TECHNIQUES FOR COLLECTING DATA
5
EVALUATE VALUE AND FEASIBILITY OF DETAILED FIELD STUDY, DELPHI OR BOTH APPROACHES AND SELECT APPROACH(S)
6
USE DELPHI APPROACH TO ESTABLISH CARRYING CAPACITY
6a
Recreation Planner/ Manager Input
6b
Resource Specialist Input
6c
Establish Range of Possible Carrying Capacities
6d
Recommended Carrying Capacity For Each Option
7
USE DETAILED FIELD STUDY APPROACH TO ESTABLISH CARRYING CAPACITY
7a
Determine Biophysical Carrying Capacity
7b
Determine Psycho-Social Carrying Capacity
7c
Establish Range of Possible Carrying Capacities
7d
Recommended Carrying Capacity Figure For Each Option
8
RECOMMENDED CARRYING CAPACITY FOR STUDY AREAS
9
PREPARE FOR ESTABLISHING AN AWARENESS/ RESPONSE (MONITORING) SYSTEM FOR OTHER RECREATION ACTIVITY AREAS
10
USE PRELIMINARY LIST OF FACTORS TO ORGANIZE EXISTING DATA AND TO IDENTIFY POSSIBLE INDICATORS OF OVERUSE AND OVERCROWDING
11
EXAMINE POSSIBLE ALTERNATIVE MONITORING SYSTEMS
12
PREPARE SYSTEM FOR MONITORING
12a
Input Relevant Field Study Results
12b
Prepare Questions For Monitoring
12c
Identify Priority Areas For Recognition
12d
Establish Formats For Data Collection, Storage and Retrieval
13
RECOMMENDED MONITORING SYSTEM

*NOTE: This "Detailed Carrying Capacity Methodology" is a separate but related part of the Overall Recreation Plan and Carrying Capacity Framework and can be undertaken concurrently with the "Overall Framework" (See Step #5, Page 27).

STEPS	INPUTS	OUTPUTS	PROCEDURES
1. SELECT AREAS FOR DETAILED RECREATIONAL CARRYING CAPACITY STUDY	• Criteria for selecting activities which are most in need of carrying capacity guidelines. • Criteria for selecting resource areas which are most in need of carrying capacity guidelines. • Existing use polygons. • Recreation Resource Management Classes.	• A list of activities ranked according to their present need for carrying capacity guidelines. • A list of resource areas ranked according to their present need for carrying capacity guidelines. • A list of activity/resource situations ranked according to their present need for carrying capacity guidelines. • Selected areas for detailed carrying capacity study.	Although it might be desirable to conduct a more detailed carrying capacity study for all the activity/resource situations found in the CDCA, it may be unrealistic to do so, because of limited staff, time, budget or other constraints. For this reason it will be important to identify and study those activity/resource situations which will benefit most from a carrying capacity figure. • Establish guidelines which can be used to identify those activities which are most in need of a carrying capacity figure. (Example Guidelines for Selecting Activities Most in Need of a Numerical Carrying Capacity) 1. If the activity is now very popular or if it is likely to become popular in the future. 2. If the activity is site or area specific. 3. If the activity could be hazardous if overcrowded. 4. If the environmental impacts associated with the activity are significant. 5. Etc. 6. Etc. • Apply the guidelines to the list of activities shown in Chapter 6. A matrix similar to the example shown on the following page could be used to systematically score and rank the activities based upon the number of guidelines that are met. This would help identify priority activities which are most in need of numerical carrying capacity guidelines.

STEPS	INPUTS	OUTPUTS	PROCEDURES

#1 (continued)

EXAMPLE FORMAT For Identifying Priority Activities Most In Need of Numerical Carrying Capacity Guidelines:

Activities / Guidelines*	1.	2.	3.	4.	5.	TOTAL NUMBER OF GUIDELINES MET	
1.	x		x	x		3	
2.		x				1	
3.	x	x	x	x	x	5	
4.							
5.							
6.							
7.							
Etc.							

*NOTE: These guidelines also could be weighted based upon their relative importance.

- Establish other guidelines which can be used to select desert areas which benefit most from a numerical carrying capacity.

  (Example Guidelines)

  1. If the area is one-of-a-kind
  2. If the area is exceptionally sensitive (e.g. endangered specie habitat)
  3. If the area is presently under heavy use
  4. If the area is likely to be under heavy use within the next 5 years
  5. Others

STEPS	INPUTS	OUTPUTS	PROCEDURES

#1 (continued)

- Apply the guidelines to the existing use polygon areas; the example matrix shown below could be used to systematically score and rank the use polygons based upon the number of guidelines that are met. This would help identify priority use polygons which are most in need of numerical carrying capacity guidelines.

EXAMPLE FORMAT For Identifying Priority Areas Most In Need of Numerical Carrying Capacity Guidelines:

Existing Use Polygons / Guidelines*	1.	2.	3.	4.	5.	TOTAL NUMBER OF GUIDELINES MET	
#1	x	x	x			3	
#2			x	x		2	
#3	x			x		2	
#4		x				1	
#5	x	x	x	x	x	5	
#6							
#7							
#8							
#9							
Etc.							

*NOTE: These guidelines also could be weighted based upon their relative importance.

STEPS	INPUTS	OUTPUTS	PROCEDURES
#1 (continued)			• By ranking the activities and use polygons on the basis of the number of guidelines met, it would then be possible for FPS to select priority areas for detailed carrying capacity study. • Another overall guideline might be to select at least one "high" priority area for each of the Recreation Resource Management Classes. • Those activities which do not lend themselves to the establishment of a numerical carrying capacity should be filtered directly to Step #9.
2. ACQUIRE AND REVIEW EXISTING RECREATION CARRYING CAPACITY-RELATED INFORMATION	• Carrying capacity-related literature and source material. • Existing standards in use. • Desert Planning Program Reports (see Chapter 6).	• Carrying capacity information.	• Acquire and review existing recreation carrying capacity related information. Source materials might include: the U.S. Forest Service research studies, National Technical Information Service (NTIS), Smithsonian Information Exchange, the State SCORP, the BLM Desert Planning Program Studies (see Chapter 6), and other information sources regarding recreation and/or carrying capacity.
3. LIST POSSIBLE MANAGEMENT OPTIONS	• A general list of all the possible management options. • Purpose of the Recreation Resource Management Classes.	• A list of possible management options for each of the selected areas.	• Since management objectives are essential ingredients needed to determine carrying capacity, it will be important to identify all the possible management options related to carrying capacity for each area selected for detailed carrying capacity study. The list below shows a few examples of possible management options. (Examples of Possible Management Options) Possible Options 1. Prohibit Recreational use to protect resource. 2. Allow for only very limited recreation use in sensitive resource areas. 3. Manage the area on the basis of safety guidelines.

STEPS	INPUTS	OUTPUTS	PROCEDURES
#3 (continued)			4. Manage the area to provide for a high quality recreation experince. 5. Maximize use to satisfy strong demand.
4. USE PRELIMINARY LIST OF FACTORS TO ORGANIZE EXISTING DATA AND DETERMINE DATA VOIDS/ NEEDS AND TECHNIQUES	• List of factors in Chapter 6. • List of carrying capacity data required. • List of relevant data from previous and ongoing BLM studies, and from literature search (see Chapter 6).	• List of missing data. • Techniques for collecting data needed.	• Examine the factors already prepared and use them as a guide for organizing data and determining data needs. The example format shown below could be used to organize the data and determine data voids. Various techniques for collecting the needed data should be exhausted.
5. EVALUATE VALUE AND FEASIBILITY OF DETAILED FIELD STUDY, DELPHI OR BOTH APPROACHES AND SELECT APPROACH(S)	• Outputs of Step #1. • Information regarding the time and costs involved with the Detailed Field Approach vs. the costs of the Delphi Approach. • Outputs of Step #4.	• A decision to use either: 1. A Delphi Approach; 2. A Detailed Field Study Approach; or 3. Both Delphi and Detailed Field Study Approaches.	• Using the outputs of Step #1 and Step #4, and with information about costs of the "Delphi" vs. the "Detailed Field Approach" make a decision about which approach is appropriate considering the situation and the resources available. For some activities, the Delphi approach might be best and for others the Detailed Field Approach might be better. The guidelines on the next page could be used to help make the decision about which approach to use. (Another option would be to use both approaches.)

EXAMPLE FORMAT For Organizing Carrying Capacity Data and Determining Data Needs

AREA #1

Factors	List of Data Required	List Relevant Data From Previous & Ongoing BLM Studies, & From Literature Search	Determine Missing Data	Determine & Evaluate Feasibility of Techniques for Collecting Data Needed

STEPS	INPUTS	OUTPUTS	PROCEDURES

#5 (continued)

(Example Guidelines)

Use Delphi Method if:	Use Field Study Method if:
• time & funds are limited	• funds are ample
• staff is limited	• very little data is available
• data are already available	• additional on-site research & observations are required
• (other guidelines)	• (other guidelines)

(NOTE: If a Delphi Method of establishing carrying capacity figures is not selected, delete Step #6 and go to Step #7. If neither the Delphi Method nor the Detailed Field Study Method are appropriate for the selected area, the area should be considered in the monitoring process starting with Step #9.)

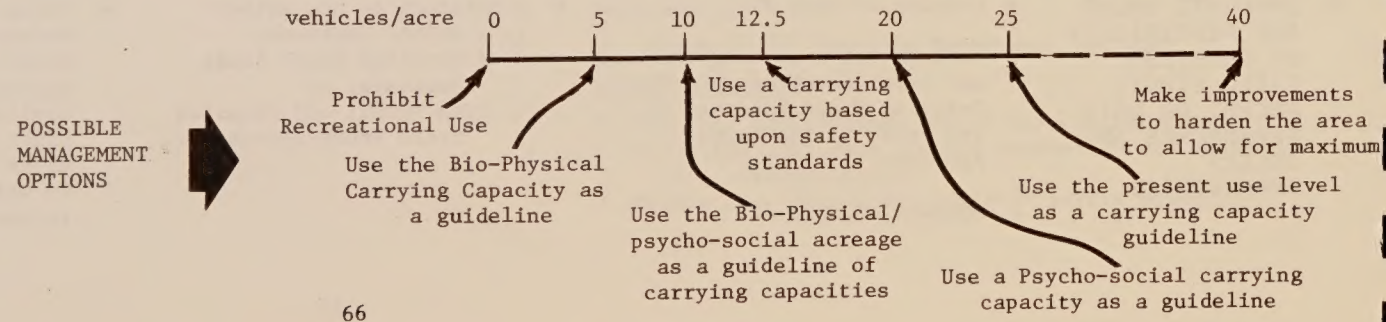
6. USE THE DELPHI APPROACH TO ESTABLISH CARRYING CAPACITY

- Outputs of Step #1.
- Outputs of Step #2.
- Outputs of Step #3.
- Outputs of Step #4.
- Delphi Group #1
  Recreation Planner and Management input
- Delphi Group #2
  Resource Specialist input

- A range of possible carrying capacities for each of the selected study areas.
- A recommended carrying capacity figure for each management option.

- Organize two groups of knowledgeable people to help establish recreational carrying capacity for the selected areas. The first group should consist of BLM recreation planners and managers, and experts on the subject of recreational carrying capacity. This group would take the outputs of Step #'s 1, 2, 3 and 4 and with their knowledge and the information available, attempt to establish logical carrying capacity figures for the selected areas. A range of carrying capacity figures should be established by the group for each of management options listed in Step #3, as shown in the example below. (The present user density should also be indicated on the range.

EXAMPLE RANGE OF CARRYING CAPACITIES


vehicles/acre
0
5
10
12.5
20
25
40
POSSIBLE MANAGEMENT OPTIONS
Prohibit Recreational Use
Use the Bio-Physical Carrying Capacity as a guideline
Use the Bio-Physical/ psycho-social acreage as a guideline of carrying capacities
Use a carrying capacity based upon safety standards
Use a Psycho-social carrying capacity as a guideline
Use the present use level as a carrying capacity guideline
Make improvements to harden the area to allow for maximum

STEPS	INPUTS	OUTPUTS	PROCEDURES
#6 (continued)			• This range would then serve as a basis for the second group's reaction. The second group should consist largely of resource specialists from BLM's Desert Planning Staff (the possibility of "calling in" outside specialists also should be considered). They would review the range of carrying capacities and assess the impacts the various carrying capacities would have on the resource. The group would then suggest (to the DPS recreation planners) revisions to the carrying capacity range based upon their knowledge and expertise. • The Recreation Planners of the Desert Planning Staff would then, based upon the first and second groups' input, recommend appropriate carrying capacities for each of the various management options.
NOTE: If only the Delphi Approach is being used, omit #7 and go to Step #8.			
7. USE A DETAILED FIELD STUDY APPROACH TO ESTABLISH CARRYING CAPACITY	• Outputs of Steps #1, #2, #3 and #4. • Recreational carrying capacity factors (Chapter 6).	• A range of possible carrying capacities for each of the selected areas. • A recommended carrying capacity figure for each management option.	• Using the inputs listed for this step, develop questions for user interviews and discussions with resource specialists. Conduct user interviews, call in resource specialists, and use the BLM studies, field observations, and other information obtained during Step #2 as input to help establish bio-physical, psycho-social and other possible carrying capacity levels associated with each management option. Also, determine the present user density for the area. • Portray the range of possible carrying capacities in a manner similar to the example shown in Step #6. • Recommend an appropriate carrying capacity figure for each option.
8. RECOMMENDED CARRYING CAPACITY FOR STUDY AREAS	• Outputs of Steps #6d and #7d.	• A numerical carrying capacity guideline for each of the selected areas.	• Decide upon the appropriate option for each of the areas.

STEPS	INPUTS	OUTPUTS	PROCEDURES
#8 (continued)	• A decision about which option and related carrying capacity is most appropriate.		• From the outputs of Steps #6c and #7c prepare a table showing carrying capacity by activity by management class for each of the various options. • Establish a system for data collection, storage and retrieval for reevaluating the carrying capacities established for each area.
9. PREPARE FOR ESTABLISHING AN AWARENESS/ RESPONSE SYSTEM FOR OTHER RECREATION ACTIVITY AREAS	(Inputs, outputs, and procedures for establishing an awareness/response system are described in the following steps.)		
10. USE PRELIMINARY LIST OF FACTORS TO ORGANIZE EXISTING DATA AND TO IDENTIFY POSSIBLE INDICATORS OF OVERUSE AND OVERCROWDING	• Preliminary factors listed in Chapter 6. • DPS and other studies.	• Indicators of overcrowding and overuse which can be used to monitor resource use.	• Use preliminary list of factors in Chapter 6 to organize existing data and to identify possible indicators of overuse and overcrowding. The example format shown below can be used to help accomplish this Step.
11. EXAMINE POSSIBLE ALTERNATIVE MONITORING SYSTEMS	• Source materials to examine other recreational monitoring systems presently in use by others.	• Possible alternative monitoring systems which might be used in the California Desert Conservation Area.	• Collect information about different types of monitoring systems presently in use by others. • Evaluate the appropriateness of these monitoring systems inlight of BLM's situation and needs; list the pros and cons of each system.

EXAMPLE FORMAT FOR ORGANIZING EXISTING DATA AND IDENTIFYING POSSIBLE INDICATORS OF OVERUSE AND OVERCROWDING

Factors	Existing Data	Possible Indicators of overcrowding & overuse
Resource sensitivity	Sensitive vegetation types	A change in the density, diversity, & distribution of the vegetation

STEPS	INPUTS	OUTPUTS	PROCEDURES

#11 (continued)

- Examine alternative montoring systems which would be most appropriate for BLM's needs. The system should be capable of: 1) checking the appropriateness of established carrying capacity figures; 2) recognizing when a resource is being overused or an area is overcrowded.

- An Example of one possible monitoring approach is summarized below:

(One Possible Monitoring Approach--An Example)

Activity areas could be monitored by recreation managers through a process of asking and answering a series of questions (previously prepared by DPS) relating to user satisfaction and resource change. If the manager, after answering the questions, finds that the area is not overused or overcrowded, he would simply record the existing user density and continue to manage the areas as he had in the past. However, if the manager finds that the area is becoming overcrowded or overused, he applies an interim control to limit recreational use of the area. The area would continue to be managed for limited usage until an appropriate carrying capacity guideline is established for the area. To establish an appropriate carrying capacity, a resource specialist would be called in and users would be interviewed.

(Pros and Cons of this Example Monitoring Approach)

Pros:

- Deals with carrying capacity only when necessary.
- Relatively inexpensive.
- Can be used with all activities and situations.

Cons:

- Places a lot of responsibility upon the recreation manager.
- Carrying capacity guidelines may be established too late.

STEPS	INPUTS	OUTPUTS	PROCEDURES
#11 (continued)			Pros: (cont.) • When carrying capacities are established, they are based upon on-site, real life situations. Cons: (cont.) • Resource specialists of DPS may no longer be available to help establish the bio-physical carrying capacity. • May require additional managers or special staff to monitor activity areas.
12. PREPARE SYSTEM FOR MONITORING	• Field study results for guidelines to developing questions re resource and user change. • DPS studies. • Discussions with resource specialists and user groups. • Periodic observations. • Guidelines for determining priority areas for monitoring.	• A system for monitoring user satisfaction and resource change. • Questions for monitoring user satisfaction and resource change. • List of priority areas for monitoring. • Format for data collection, storage and retrieval.	• Using the relevant field study results, develop questions for monitoring user satisfaction and resource change. (Example Questions for Monitoring User Satisfaction) 1. Are users starting to complain about overcrowding? 2. Has there been an overall change in the type of person using the area? 3. Is there a significant increase in the number of user conflicts and/or accidents? (Example Questions for Monitoring Resource Change) Are any natural characteristics of the resource being changed as a result of recreational use? (A general question like this might be asked and a checklist similar to the one below could be used to indicate the specific types of resource change.) Yes No 1. Are the soils being eroded? ____ ____ 2. Are there signs of permanent vegetative damage? ____ ____ 3. Are wildlife habitats being disturbed? ____ ____ 4. Are there any other indications of resource change? ____ ____

STEPS	INPUTS	OUTPUTS	PROCEDURES
#12. (continued)			• Identify priority areas for monitoring. The same kinds of guidelines shown in the example for Step #1 could be used to select priority areas for monitoring. • Establish a format for data collection, storage, and retrieval.
13. RECOMMENDED MONITORING SYSTEM	• Steps #9 through #12d.	• A recommended monitoring system.	• Recommend an appropriate monitoring system and use the information which results from this system to develop carrying capacity guidelines for other similar activity areas of the California Desert.

6 TOOLS FOR ADDRESSING CARRYING CAPACITY IN PHASE II

PREDOMINANT DESERT RECREATION ACTIVITIES

INTRODUCTION

A wide variety of recreation activities occur in the California Desert Conservation Area (CDCA). The list of activities presented here was discussed in Recreational Carrying Capacity Advisory Group Workshops and constitutes a rather comprehensive list.

Although the list represents recreation activities predominant in the California Desert in recent years, it is important to realize that recreation activity patterns should be thought of as dynamic rather than static. Desert recreation activities will change over time in light of changing population composition, user motives, newly discovered activities, new types of recreation equipment, and other factors.

This list is simply a general indication of the various types of activities which occur in the California Desert Conservation Area (CDCA); it is neither intended to be a final taxonomical listing of activities nor a recommended list of preferred activities for the California Desert.

CURRENT RECREATION ACTIVITIES IN THE CALIFORNIA DESERT

1. Air Sports

   Hang Gliding
   Hot Air Ballooning
   Parachuting
   Soaring
   Gyrocoptering

2. Camping

   Primitive Site Camping
   Improved Site Camping
   Random Camping

3. Collecting (Pre-determined, Incidental)

   Flora-plants, leafs, flowers, etc.
   Driftwood
   Metal

4. Cultural Observation/Study

   Archeology
   Historic Study
   Finding Sites to Protect
   (Site Protection, Exploration)

5. Hiking

   Backpacking
   General Hiking
   Walking for Pleasure
   Along Designated Trail Systems

6. Horseback Riding

   Trail Rides
   Horse Camping

7. Hunting

   Big Game Hunting
   Small Game Hunting
   Predator Hunting

8. Model Flying

   Rocket Launching
   Airplane Flying

9. Nature Observation/Study

   Flora Observation/Study
     1. Endangered species
     2. Other
   Wildlife Observation/Study
     1. Birdwatching
     2. Endangered species - Bighorn Sheep, Prairie Falcon
     3. Reptiles, Lizards
     4. Mammals
     5. Other
     6. Scouting for Game

10. Off-Road Vehicle (ORV) Riding

(NOTE: See the "Tentative" OHV Management Class on page 94.)

Dune Buggying
Four-Wheel Drive Vehicle Riding
Motorcycling
Sand Sailing/Skate Sailing
Organized - Competitive
Organized - Non-Competitive
Unorganized - Solo
Unorganized - Group
Incidental
Spectator/Participant

11. Partying

12. Photography/Painting

Primary
Incidental

13. Picnicking

Organized (individual, family, small group, large group)
Unorganized

14. Rockhounding

15. Rock Climbing

Technical
Novice

16. Shooting

Rifle/Pistol Shooting
1. Directed (ranges or designated areas)
2. Undirected (Plinking)
3. Competitive

Archery
1. Directed
2. Undirected
3. Competitive

17. Sightseeing (Scenic Driving)

Paved Roads
Unpaved Roads

18. Spelunking (Caving)

ACTIVITY COMPATIBILITY GUIDELINES

Compatibility among activities is an important recreational carrying capacity consideration. Knowledge about the basic compatibilities of various desert activities is necessary when establishing Recreation Resource Management Classes and when determining detailed carrying capacities for individual activity areas. This section provides an activity compatibility matrix for use as a recreation planning and carrying capacity guideline during Phase II of the Recreational Carrying Capacity Study.

The compatibility matrix presented here is simplified because it deals only with general compatibilities between primary activities and other primary activities; it does not attempt to deal with the compatibilities of various activity combinations nor with the compatibilities between primary and ancillary activities. It is also somewhat limited because it assumes that the activities (i.e. the two being evaluated) occur adjacent to each other or at least within the same sphere of influence. Even with these limitations, the matrix serves as a point of departure for more detailed desert recreation planning and for initial carrying capacity considerations.

Specifically, the compatibility matrix can be used as a guideline when establishing tentative management classes (see Overall Framework Step 3) and when delineating management class boundaries in the California Desert. Using the matrix as a guide, a general rule-of-thumb during Phase II should be to recommend the establishment of buffer zones between incompatible management class areas (e.g. between OHV Play/Competition areas and Wildland areas), and between incompatible individual activity areas (e.g. between nature study areas and hunting areas). In addition, the matrix can be used to identify potential incompatible uses within multiple recreation use areas. When activity incompatibilities are identified in multiple use area and when buffer zones are not appropriate, the carrying capacity of the area might be lower than it might otherwise be under a more compatible activity situation.

The compatibility evaluations shown in the following matrix are based largely upon the consultant's past research and experiences, and the results of the Organized Recreation Group Study (a BLM funded study completed September 1977). The activities listed across the top of the Matrix are individually evaluated against the same activities listed on the left-hand side of the matrix. Three different compatibility evaluations are shown in the Matrix: 1) for those activities which are likely to be compatible with one another, matrix grid cells are left open (□); 2) those activities which "could be compatible or uncompatible" depending upon specific user and characteristics are indicated with a "O"; and 3) activities where conflicts in use are likely to occur are indicated with a "●". Additional BLM studies and research will provide a basis for making revisions and additions to these evaluations. The On-Site User Survey and the Psycho-Social Satisfactions Study are two of the BLM studies that will provide useful information about activity compatibility. For more information about these studies, see pages 108 and 109.

ACTIVITY COMPATIBILITY MATRIX*

KEY

□ = Probably Compatible

O = Could be Compatible or Incompatible

● = Probable Conflicts in Use

ACTIVITY	1. AIR SPORTS	a) Hang Gliding	b) Hot Air Ballooning	c) Parachuting	d) Soaring	e) Gyrocoptering	2. CAMPING	a) Primitive Site Camping	b) Improved Site Camping	c) Random Camping	3. COLLECTING (Incidental)	4. CULTURAL OBSERVATION	a) Archeology	b) Historic Study	c) Exploration/Site Protection	5. HIKING	a) Backpacking	b) General Hiking	c) Walking for Pleasure	6. HORSEBACK RIDING	a) Trail Rides	b) Horse Camping	7. HUNTING	a) Big Game	b) Small Game	c) Predator	8. MODEL FLYING	a) Rocket Launching	b) Airplane Flying	9. NATURE OBSERVATION	a) Flora Observation	b) Wildlife Observation	10. ORV RIDING, PLAY/COMPETITION	a) Dune Buggying	b) 4-Wheel Drive Vehicle	c) Motorcycling	d) Sand Sailing/Skate Sailing	11. ORV TOURING	12. ORV ACCESS	13. ORV COMPETITION	14. PARTYING	15. PHOTOGRAPHY	a) Primary	b) Incidental	16. PICNICKING	a) Organized Group	b) Family	17. ROCKHOUNDING	18. ROCK CLIMBING	a) Technical	b) Novice	19. SHOOTING	a) Directed	b) Undirected	c) Competitive	20. SIGHTSEEING (Scenic Driving)	a) Paved Roads	b) Unpaved Roads	21. SPELUNKING
1. AIR SPORTS																																																											
a) Hang Gliding			●	●	●	●		●	●	O					O		●	O			O	O		●	●	●		●	●		O	●		O	O	O	O	O		●			O			O	O	O					●	●	●		●	O	
b) Hot Air Ballooning		●		●	●	●		●									●	O			O	O		●	●	●		●	●		O	O		O	O	O	O						O										●	●	●				
c) Parachuting		●	●		●	●		●	O	O					O		●	O			O	O		●	●	●		●	●		O	●		O	O	O	O	O		●			O			O	O	O					●	●	●		●	O	
d) Soaring		●	●	●		●											O	O						O	O	O		●	●																								O	O	O				
e) Gyrocoptering		●	●	●	●			●	●	O					O		●	O			O	O		●	●	●		O	O		O	●		O	O	O	O	O		●			O			O	O	O					●	●	●		●	O	
2. CAMPING																																																											
a) Primitive Site Camping		●	●	●		●			●	●									O		O	O		●	●	●		●	●					●	●	●	●	●		●	●					●	O	O		O	O		●	●	●		●	●	
b) Improved Site Camping		●		●		●		●					O	O	O		O				●	O		●	●	●		●	●		O	O		●	●	●	O			●	O					O	O			O	O		●	●	●				
c) Random Camping		O		O		O		●													O	O		●	●	●		●	●		O	O		●	●	●	O			●	O					O				O	O		●	●	●				
3. COLLECTING (Incidental)													●	●	●									●	●	●		O	O					O	O	O	O			●	O					O							●	●	●				
4. CULTURAL OBSERVATION																																																											
a) Archeology								O	O	O	●											O		●	●	●		O	O					O	O	O	O			●	O							●					●	●	●				O
b) Historic Study								O	O	O	●											O		●	●	●		O	O					O	O	O	O			●	O							●					●	●	●				O
c) Exploration/Site Protection		O				O		O	O	O	●											O		●	●	●		O	O					O	O	O	O	O		●	O							●					●	●	●				O
5. HIKING																																																											
a) Backpacking		●	●	●	O	●			O	O									O		O	O		●	●	●		●	●					●	●	●	●	●	●	●	●					●	O	O					●	●	●				
b) General Hiking		O	O	O	O	O															O	O		●	●	●		●	●					●	●	●	O	O	O	●	O					O							●	●	●				
c) Walking for Pleasure																	O				O	O		●	●	●		●	●					O	O	O	O	O	O	●	O					O							●	●	●				
6. HORSEBACK RIDING																																																											
a) Trail Rides		O	O	O		O			●								O	O	O					●	●	●		●	●					●	●	●	●	●	●	●	O					O							●	●	●				
b) Horse Camping		O	O	O		O		O	O				O				O	O	O					●	●	●		●	●		O	O		●	●	●	O	●	●	●	O					O	O						●	●	●				

ACTIVITY COMPATIBILITY MATRIX* (continued)

KEY

□ = Probably Compatible

0 = Could be Compatible or Incompatible

● = Probable Conflicts in Use

	1. AIR SPORTS	a) Hang Gliding	b) Hot Air Ballooning	c) Parachuting	d) Soaring	e) Gyrocoptering	2. CAMPING	a) Primitive Site Camping	b) Improved Site Camping	c) Random Camping	3. COLLECTING (Incidental)	4. CULTURAL OBSERVATION	a) Archeology	b) Historic Study	c) Exploration/Site Protection	5. HIKING	a) Backpacking	b) General Hiking	c) Walking for Pleasure	6. HORSEBACK RIDING	a) Trail Rides	b) Horse Camping
7. HUNTING																						
a) Big Game		●	●	●	0	●		●	●	●	●		●	●	●		●	●	●		●	●
b) Small Game		●	●	●	0	●		●	●	●	●		●	●	●		●	●	●		●	●
c) Predator		●	●	●	0	●		●	●	●	●		●	●	●		●	●	●		●	●
8. MODEL FLYING																						
a) Rocket Launching		●	●	●	●	0		●	●	0	0		0	0	0		●	●	●		●	●
b) Airplane Flying		●	●	●	●	0		●	●	0	0		0	0	0		●	●	●		●	●
9. NATURE OBSERVATION																						
a) Flora Observation		0	0	0		0			0	0												0
b) Wildlife Observation		●	0	●		●			0	0												0
10. ORV RIDING, PLAY/COMPETITION																						
a) Dune Buggying		0	0	0		0		●	●	●	0		0	0	0		●	●	0		●	●
b) 4-Wheel Drive Vehicle		0	0	0		0		●	●	●	0		0	0	0		●	●	0		●	●
c) Motorcycling		0	0	0		0		●	●	●	0		0	0	0		●	●	0		●	●
d) Sand Sailing/Skate Sailing		0	0	0		0		●	0	0	0		0	0	0		●	0	0		●	0
11. ORV TOURING		0		0		0		●							0		●	0	0		●	●
12. ORV ACCESS																	●	0	0		●	●
13. ORV COMPETITION		●		●		●		●	●	●	●		●	●	●		●	●	0		●	●
14. PARTYING								●	0	0	0		0	0	0		●	0			0	0
15. PHOTOGRAPHY																						
a) Primary		0	0	0		0																
b) Incidental																						

	7. HUNTING	a) Big Game	b) Small Game	c) Predator	8. MODEL FLYING	a) Rocket Launching	b) Airplane Flying	9. NATURE OBSERVATION	a) Flora Observation	b) Wildlife Observation	10. ORV RIDING, PLAY/COMPETITION	a) Dune Buggying	b) 4-Wheel Drive Vehicle	c) Motorcycling	d) Sand Sailing/Skate Sailing	11. ORV TOURING	12. ORV ACCESS
7. HUNTING																	
a) Big Game			●	0		●	●		●	●		●	●	●	●	●	0
b) Small Game		●		0		●	●		●	●		●	●	●	●	●	0
c) Predator		0	0			●	●		0	0		●	●	●	●	●	0
8. MODEL FLYING																	
a) Rocket Launching		●	●	●			0		0	●		●	●	●	●	●	0
b) Airplane Flying		●	●	●		0			0	●		●	●	●	●	●	0
9. NATURE OBSERVATION																	
a) Flora Observation		●	●	●		0	●					●	●	●	●	●	0
b) Wildlife Observation		●	●	●		0	●					●	●	●	●	●	0
10. ORV RIDING, PLAY/COMPETITION																	
a) Dune Buggying		●	●	●		●	●		●	●			0	0	●	0	
b) 4-Wheel Drive Vehicle		●	●	●		●	●		●	●		0		0	●	0	
c) Motorcycling		●	●	●		●	●		●	●		0	0		●	0	
d) Sand Sailing/Skate Sailing		●	●	●		●	●		●	●		●	●	●		0	
11. ORV TOURING		●	●	●		●	●		●	●		0	0	0	0		
12. ORV ACCESS		0	0	0		0	0		0	0							
13. ORV COMPETITION		●	●	●		●	●		0	0		0	0	0	0	0	
14. PARTYING		●	●	●		0	0		●	●		0	0	0	0		
15. PHOTOGRAPHY																	
a) Primary		●	●	●		●	●					●	●	●	●		
b) Incidental		0	0	0		0	0					0	0	0	0		

	13. ORV COMPETITION	14. PARTYING	15. PHOTOGRAPHY	a) Primary	b) Incidental	16. PICNICKING	a) Organized Group	b) Family	17. ROCKHOUNDING	18. ROCK CLIMBING	a) Technical	b) Novice	19. SHOOTING	a) Directed	b) Undirected	c) Competitive	20. SIGHTSEEING (Scenic Driving)	a) Paved Roads	b) Unpaved Roads	21. SPELUNKING
7. HUNTING																				
a) Big Game	●	●		●	0		●	●	●		●	●		0	●	●		0	●	0
b) Small Game	●	●		●	0		●	●	●		●	●		0	●	●		0	●	0
c) Predator	●	●		●	0		●	●	0		●	●		0	●	●		0	●	0
8. MODEL FLYING																				
a) Rocket Launching	●	0		●	0		0	0	0		0	0		●	●	●		0	0	
b) Airplane Flying	●	0		●	0		0	0	0		0	0		●	●	●				
9. NATURE OBSERVATION																				
a) Flora Observation	●	●					0		0					●	●	●				
b) Wildlife Observation	●	●					0		0					●	●	●				
10. ORV RIDING, PLAY/COMPETITION																				
a) Dune Buggying	●	0		●	0		0	0	●		0	0		0	●	0		0	0	0
b) 4-Wheel Drive Vehicle	●	0		●	0		0	0	●		0	0		0	●	0		0	0	0
c) Motorcycling	●	0		●	0		0	0	●		0	0		0	●	0		0	0	0
d) Sand Sailing/Skate Sailing	●	0		●	0		0	0	●		0	0		0	●	0		0	0	0
11. ORV TOURING	●						0							0	●	0				
12. ORV ACCESS	●													0	0	0				
13. ORV COMPETITION		0		0	0		0	0	0		0	0		0	●	0		0	0	
14. PARTYING	0			0			0	0						●	●	●				
15. PHOTOGRAPHY																				
a) Primary	●	0												0	●	0				
b) Incidental	0													0	0	0				

ACTIVITY COMPATIBILITY MATRIX* (continued)

KEY

□ = Probably Compatible

0 = Could be Compatible or Incompatible

● = Probable Conflicts in Use

	1. AIR SPORTS	a) Hang Gliding	b) Hot Air Ballooning	c) Parachuting	d) Soaring	e) Gyrocoptering	2. CAMPING	a) Primitive Site Camping	b) Improved Site Camping	c) Random Camping	3. COLLECTING (Incidental)	4. CULTURAL OBSERVATION	a) Archeology	b) Historic Study	c) Exploration/Site Protection	5. HIKING	a) Backpacking	b) General Hiking	c) Walking for Pleasure	6. HORSEBACK RIDING	a) Trail Rides	b) Horse Camping	7. HUNTING	a) Big Game	b) Small Game	c) Predator	8. MODEL FLYING	a) Rocket Launching	b) Airplane Flying	9. NATURE OBSERVATION	a) Flora Observation	b) Wildlife Observation	10. ORV RIDING, PLAY/COMPETITION	a) Dune Buggying	b) 4-Wheel Drive Vehicle	c) Motorcycling	d) Sand Sailing/Skate Sailing	11. ORV TOURING	12. ORV ACCESS	13. ORV COMPETITION	14. PARTYING	15. PHOTOGRAPHY	a) Primary	b) Incidental	16. PICNICKING	a) Organized Group	b) Family	17. ROCKHOUNDING	18. ROCK CLIMBING	a) Technical	b) Novice	19. SHOOTING	a) Directed	b) Undirected	c) Competitive	20. SIGHTSEEING (Scenic Driving)	a) Paved Roads	b) Unpaved Roads	21. SPELUNKING
16. PICNICKING																																																										
a) Organized Group		0		0		0		●	0	0	0					●	0	0		0	0		●	●	●		●	●		0	0		0	0	0	0	0		0	0												0	●	0						
b) Family		0		0		0		0	0							0					0		●	●	●		●	●				●	0							●	0												0	●	0						
17. ROCKHOUNDING		0		0		0		0					●	0	0	0							●	●	●		0	0		0	0		●	●	●	●			●												0	●	0						
18. ROCK CLIMBING																																																										
a) Technical								0	0	0													●	●	●		0	0					0	0	0	0			0												0	●	0						
b) Novice								0	0	0													●	●	●		0	0					0	0	0	0			0												0	●	0						
19. SHOOTING																																																										
a) Directed		0	●	0	0	●		●	●	●	●		●	●	●		●	●	●		●	●		0	0	0		●	●		●	●		0	0	0	0	0	0	0	●		0	0							0	●	●			●	0	0	
b) Undirected		●	●	●	0	●		●	●	●	●		●	●	●		●	●	●		●	●		●	●	●		●	●		●	●		●	●	●	●	●	●	0	●	●		0	0							●		●			0	0	0
c) Competitive		●	●	●	0	●		●	●	●	●		●	●	●		●	●	●		●	●		●	●	0		●	●		●	●		0	0	0	0	0	0	0	●		0	0							●	●				0	0	
20. SIGHTSEEING (Scenic Driving)																																																										
a) Paved Roads		●		●		●		●					0	0	0		0							0	0	0		0						0	0	0	0	0	0		0												0	0	0						
b) Unpaved Roads		0		0		0		●					●	●	●		0							0	0	0		0						0	0	0	0	0	0		0												0	0	0						
21. SPELUNKING													0	0	0									0	0	0								0	0	0	0																0							

*NOTE: This matrix is generalized; it evaluates only the relative compatibilities between primary to primary activities and assumes: 1) that the two activities being evaluated are occurring within the same resource area (at moderate levels of use); and 2) no buffer zones exist between the different activity participants.

RESOURCE/ACTIVITY RELATIONSHIP GUIDELINES

Some recreation activities require a particular type of resource to function (e.g. sand sailing requires dry lake beds, mountain climbing requires mountains, dune buggying requires sand dunes, spelunking requires caves, etc.). Other activities, while they do not require a specific type of resource, are enhanced by the presence of certain resources. For example, water resources, scenic areas and woodlands, while not essential to camping, generally enhance the camping experience.

Conversely, some resource areas, because of their basic characteristics, are undesirable for certain types of activities (e.g. rare animal habitats and endangered specie areas should not be used for off-road vehicle play or competition areas; and very steep slopes are generally undesirable locations for improved campgrounds, horseback riding, and a variety of other activities.

It is important to understand resource/activity relationships prior to establishing and delineating Recreation Resource Management Class areas in the California Desert (see Overall Framework Steps 3, 6, 7 and 10) and when preparing detailed activity plans (see Overall Framework Step 12). The matrix presented in this section is an initial attempt to determine the fundamental relationships between recreation resources and activities in the California Desert. Although the matrix is based upon limited Phase I research, it provides a starting point for further research and can be used as a planning guideline during the Phase II portion of the Desert Carrying Capacity Study.

RESOURCE/ACTIVITY RELATIONSHIP MATRIX

● = Essential
O = Desirable
X = Undesirable
□ = Not Necessary

ACTIVITY \ RESOURCE	Canyon	Cave	Cliff/Escarpment	Desert Pavement	Dry Lake Bed/Play Area	Flat Sand/Salt Area	Flat Terrain/Plain	Geologic Feature	Hill	Mineralized Area	Mountain	Mountain Peak/Ridge	Sand Dune	Scenic Area/Overlook	Sensitive Soil Area	Spring	Steep Slope	Unique Natural Area	Wash	Water Edge/Feature	Wetlands	Wilderness Area	Animal Concentration	Diverse Animal Area	Diverse Plant Area	Forest	Fossil Area	Game Area (Hunting)	Plant/Floral Concentration	Rare Animal Area	Rare Plant Area	Sparse Vegetation	Woodland/Brush	Historic/Cultural Area	Mines/Tailings	Paved Road	Trails	Unpaved Road
1. AIR SPORTS																																					
a) Hang Gliding			O					O		O	O		O				O					X	X								O						
b) Hot Air Ballooning										X	X											X															
c) Parachuting							O			X	X											X									O						
d) Soaring																						X															
e) Gyrocoptering																						X	X														
2. CAMPING																																					
a) Primitive Site Camping														O	X	O	X	O	X	O		O			O				X	X		O					
b) Improved Site Camping														O	X	O	X	X	X	O	X	X	X						X	X	X	O					
c) Random Camping														O	X	O	X		X										X	X		O					
3. COLLECTING (Incidental)										O															O		O		O					O	O			
4. CULTURAL OBSERVATION																																					
a) Archeology		O														O																	●				
b) Historic Study																O																	●				
c) Exploration/Site Protection																																	O				
5. HIKING																																					
a) Backpacking			X											O		O		O		O		O		O	O				O						O		
b) General Hiking			X											O		O		O		O				O	O				O				O		O		
c) Walking for Pleasure			X				O							O		O	X	O		O				O	O				O				O		O		
6. HORSEBACK RIDING																																					
a) Trail Rides			X				O							O		O	X			O				O	O										O		
b) Horse Camping			X				O							O		O	X			O				O	O										O		

RESOURCE/ACTIVITY RELATIONSHIP MATRIX (continued)

● = Essential
O = Desirable
X = Undesirable
□ = Not Necessary

RESOURCE	Canyon	Cave	Cliff/Escarpment	Desert Pavement	Dry Lake Bed/Play Area	Flat Sand/Salt Area	Flat Terrain/Plain	Geologic Feature	Hill	Mineralized Area	Mountain	Mountain Peak/Ridge	Sand Dune	Scenic Area/Overlook	Sensitive Soil Area	Spring	Steep Slope	Unique Natural Area	Wash	Water Edge/Feature	Wetlands	Wilderness Area	Animal Concentration	Diverse Animal Area	Diverse Plant Area	Forest	Fossil Area	Game Area (Hunting)	Plant/Floral Concentration	Rare Animal Area	Rare Plant Area	Sparse Vegetation	Woodland/Brush	Historic/Cultural Area	Mines/Tailings	Paved Road	Trails	Unpaved Road
7. HUNTING																																					
a) Big Game																O	X			O			O	O			●		X								
b) Small Game																O	X			O			O	O			●		X								
c) Predator																O	X			O			O	O					X								
8. MODEL FLYING																																					
a) Rocket Launching		X		O	O	O	O										X					X	X			X			X	X		X					
b) Airplane Flying		X		O	O	O	O										X					X	X			X			X	X		X					
9. NATURE OBSERVATION																																					
a) Flora Observation														O										O				●		O							
b) Wildlife Observation														O		O				O	O		O	O					O								
10. ORV RIDING (Play)																																					
a) Dune Buggying		X		X		O					X	X	●	O	X			X			X	X	X			X	X		X	X	X	O		X	X		
b) 4-Wheel Drive Vehicle		X		X										O	X			X	O		X	X	X			X			X	X	X	O		X			O
c) Motorcycling		X		X					O			X		O	X			X	O		X	X	X			X			X	X	X	O		X			O
d) Sand Sailing/Skate Sailing	X	X	X	X	●				X		X	X	X	O	X		X	X	X		X	X	X		X	X	X		X	X	X	O	X	X	X			
11. ORV TOURING	O	X	X											O	X		X				X	X							X	X							O
12. ORV ACCESS		X	X											O	X		X				X	X							X	X							O
13. ORV COMPETITION		X	X												X			X			X	X	X	X	X		X		X	X	X		X				O
14. PARTYING														O	X	O		X		O	X	X	X				X			X	X		X					
15. PHOTOGRAPHY																																					
a) Primary														O									O	O	O				O		O		O				
b) Incidental														O									O	O	O				O		O		O				

RESOURCE/ACTIVITY RELATIONSHIP MATRIX (continued)

● = Essential
O = Desirable
X = Undesirable
□ = Not Necessary

RESOURCE	Canyon	Cave	Cliff/Escarpment	Desert Pavement	Dry Lake Bed/Play Area	Flat Sand/Salt Area	Flat Terrain/Plain	Geologic Feature	Hill	Mineralized Area	Mountain	Mountain Peak/Ridge	Sand Dune	Scenic Area/Overlook	Sensitive Soil Area	Spring	Steep Slope	Unique Natural Area	Wash	Water Edge/Feature	Wetlands	Wilderness Area	Animal Concentration	Diverse Animal Area	Diverse Plant Area	Forest	Fossil Area	Game Area (Hunting)	Plant/Floral Concentration	Rare Animal Area	Rare Plant Area	Sparse Vegetation	Woodland/Brush	Historic/Cultural Area	Mines/Tailings	Paved Road	Trails	Unpaved Road
16. PICNICKING																																					
a) Organized Group							O							O		O				O	X			O	O				O	X	X							
b) Family							O							O		O				O				O	O				O									
17. ROCKHOUNDING								O		O													X			O								O	O	O	O
18. ROCK CLIMBING																																					
a) Technical			●	X	X	X	X				O	O	X						X		X																
b) Novice			O	X	X	X	X				O	O	X				●		X		X																
19. SHOOTING																																					
a) Directed																					X	X	X						X								
b) Undirected																					X	X	X						X								
c) Competitive																					X	X	X						X								
20. SIGHTSEEING (Scenic Driving)																																					
a) Paved Roads								O						O				O				X		O	O				O					O	●		
b) Unpaved Roads								O						O				O				X		O	O				O					O			●
21. SPELUNKING		●																																			

TENTATIVE RECREATION RESOURCE MANAGEMENT CLASSES

Well-defined management classes are essential ingredients for developing a realistic approach to the determination of recreational carrying capacity in the California Desert. This section presents tentative recreation management classes tailored specifically to California Desert resources and users. The classes were developed, discussed, and revised during the Phase I (Carrying Capacity Study and were used as examples in the description of the Overall Framework procedures in Chapter 4. They should provide the basis for deciding on management classes in Phase II of the Desert Carrying Capacity Study.

When considering management classes during this Phase I Study, several different ways of classifying areas for management were evaluated. Classifications based upon specific resource types, user experience categories, and geographic units were considered, as well as other classifications based upon legislative directives and desert resources and users.

Limitations in using specific resource types became apparent because many activities have desert-wide resource bases and do not require a specific landform or resource type to function properly. Also, using resource types as the single basis would not consider desert user objectives and legislative directives. Likewise, using user experience categories or geographic units as the sole basis would be inappropriate because they do not consider legislative directives, resource protection, and other important management-related factors.

The following guidelines were used to determine appropriate management classes. Management classes should:

- reflect legislative directives;
- reflect the recreation plan goals;
- recognize the various desert resources and situations;
- have names which are positive rather than negative or restrictive;
- reflect an awareness of BLM's present needs and an awareness of the classifications which already exist; and
- have inherent carrying capacity implications.

Using the criteria on the preceding page as guidelines, and with assistance from DPS and the Carrying Capacity Advisory Group, the suggested tentative management classes were established. The following section presents management classes, describes their purpose, and lists the representative activities for each class.

TENTATIVE RECREATION RESOURCE MANAGEMENT CLASSES

MANAGEMENT CLASSES	PURPOSE/DESCRIPTION	REPRESENTATIVE ACTIVITIES	CORRESPONDING CLASSES/TERMS PRESENTLY USED BY BLM
I. GENERAL RECREATION AREAS	The purpose of the General Recreation Areas is to provide opportunities for a variety of outdoor recreation activities and activity situations in a manner which recognizes and respects the natural limitations of desert resources. Low, moderate, and high density recreation areas are the three subclasses which are intended to provide for recreation usage in accordance with various levels of resource capability. (Example Management Class Goals) • Provide extensive areas for a wide range of recreation activities. • Manage areas for different user densities on the basis of resource capability. • Prepare activity plans, whenever necessary, to maximize user satisfaction and minimize resource degradation. • Provide for OHV touring along designated roads and trails. • Discourage OHV play and competition activities within General Recreation Areas.		• General Outdoor Recreation Area (BOR-Class II) • Natural Environment Areas (BOR-Class III) • Restricted Vehicle Use (BLM Interim Critical Management Programs for the California Desert)
A. LOW DENSITY GENERAL RECREATION AREAS	The purpose of a Low Density General Recreation Area is to provide opportunities for a variety of recreational use which would tend to produce minimum adverse effects on the resource. A Low Density General Recreation Area is intended to be an area in which activities are conducted at considerable distances away from each other, in relatively small concentrations, and in a relationship which would result in minimum intrusions on other activities.	a. Backpacking b. Primitive, unimproved site camping c. Cultural observation (individual/small group) d. Collecting (individual/small group) e. General hiking (individual/small group) f. Horseback riding (individual/small group) g. Nature Study and observation (individual/small group)	

MANAGEMENT CLASSES	PURPOSE/DESCRIPTION	REPRESENTATIVE ACTIVITIES	CORRESPONDING CLASSES/TERMS PRESENTLY USED BY BLM
LOW DENSITY GENERAL RECREATION AREAS (continued)	(Example Management Class Goals) • Establish Low Density Recreation Areas in those portions of the desert which are fragile, but do not qualify for inclusion in a more limited use management class. • Protect areas which are severely susceptible to erosion by discouraging uses which disturb vegetation and soil surface. • Encourage individual, family, and small group uses rather than large group uses. • Encourage activities, such as nature study, picnicking, and hiking, which generally do not result in negative environmental impacts. • Limit access, if necessary, to discourage overuse of these environmentally-sensitive areas.	h. Photography/painting (individual small group) i. Hunting j. Air Sports k. Family/small group picnicking l. Rockhounding (individual/small group) m. Improved site camping (individual/small group) n. OHV touring o. Model flying p. Rockclimbing q. Spelunking	
B. MODERATE DENSITY GENERAL RECREATION AREAS	The purpose of a Moderate Density General Recreation Area is to offer opportunities for recreationists to use recreation resources in a manner which can combine many different activities while protecting the experiences desired and the resources which have some limitations on use. A Moderate Density General Recreation Area is intended for use in a manner which enables activities to occur closer together and in larger concentrations than in a Low Density General Recreation Area, and farther apart and in smaller concentrations than in a High Density General Recreation Area.	a. Backpacking b. Primitive, unimproved site camping c. Cultural observation (individual/small group) d. Collecting (individual/small group) e. General hiking (individual/small group) f. Horseback riding (individual/small group) g. Nature study and observation individual/small group) h. Photography/painting (individual/small group) i. Hunting	

MANAGEMENT CLASSES	PURPOSE/DESCRIPTION	REPRESENTATIVE ACTIVITIES	CORRESPONDING CLASSES/TERMS PRESENTLY USED BY BLM
MODERATE DENSITY GENERAL RECREATION AREAS (continued)	(Example Management Class Goals) • Plan for Moderate Density Recreation in desert environments which are less sensitive than the Low Density Recreation Areas, but more sensitive than the High Density Recreation Areas. • Prepare detailed activity plans, when necessary, to assure user satisfaction and protect the resource. • Provide for all of the activities which are encouraged in the Low Density Recreation Areas, along with medium density group activities. • Plan group activities in the most physically-capable areas. • Discourage OHV play and competition, but encourage OHV touring along designated roads and trails. • Designate new OHV trails, where necessary, to afford better access to Moderate Density Recreation Areas. • Make improvements necessary for user safety and convenience.	j. Airsports k. Family/small group picnicking l. Rockhounding (individual/small group) m. Improved site camping (individual/small group) n. OHV touring o. Model flying p. Rockclimbing q. Spelunking	
C. HIGH DENSITY GENERAL RECREATION AREAS	The purpose of a High Density General Recreation Area is to offer opportunities for recreationists to engage in active and concentrated forms of recreation in resource areas which are most capable of withstanding heavy use. (Example Management Class Goals) • Plan for High Density General Recreation in those areas which are much less sensitive than Low and Moderate Density Areas.	a. All of the recreation activities listed above except hunting b. Improved site camping (group) c. Group picnicking d. Partying e. All other group or non-group activities, except OHV play and competition	• High-Density Recreation Areas (BOR-Class I) • Recreation sites (improved campgrounds)

MANAGEMENT CLASSES	PURPOSE/DESCRIPTION	REPRESENTATIVE ACTIVITIES	CORRESPONDING CLASSES/TERMS PRESENTLY USED BY BLM
HIGH DENSITY GENERAL RECREATION AREAS (continued)	• Manage high density areas for group and high user intensities and activities (e.g. partying) which tend to be more disruptive. • Provide additional access and signing, if necessary, to encourage use. • Prepare and implement detailed management plans to assure user satisfaction and resource protection. • Designate new OHV trails, where necessary, to afford better access to High Density Recreation Areas. • Provide for OHV touring along designated roads and trails. • Provide buffer areas between less intensive activity areas. • Make improvements necessary for user safety and convenience. • Provide maps, guides, BLM presence to assist users.		
II. OFF-HIGHWAY VEHICLE (OHV) PLAY & COMPETITION AREAS	The purpose of an Off-Highway Vehicle Play and Competition Area is to provide a variety of opportunities for heavy off-highway vehicle use and for recreation activities which customarily accompany OHV activities. These areas are intended to be the most capable of offering satisfactory OHV play and competition experiences in areas of the Desert which can support these activities. (Example Management Class Goals) • Prepare detailed management plans within OHV play and competition areas to assure user satisfaction, safety, and resource protection.	OHV play and competition activities: a. Dune buggying b. Motorcycling c. All-terrain vehicles d. Sand sailing/skate sailing e. OHV group and non-group activities f. Competitive events	• "Open" OHV Areas (BLM Interim Critical Management Program for the California Desert) • BLM Competitive Event Areas (BLM Interim Critical Management Programs for the California Desert)

MANAGEMENT CLASSES	PURPOSE/DESCRIPTION	REPRESENTATIVE ACTIVITIES	CORRESPONDING CLASSES/TERMS PRESENTLY USED BY BLM
OHV PLAY & COMPETITION AREAS (continued)	• Determine and implement carrying capacity controls. • Establish buffer zones between OHV play and competition areas, and other less intense recreation areas. • Establish buffer zones to insulate urban places from OHV noise. • Allow vehicles to travel anywhere in the OHV Play and Competition Areas, if they are operated responsibly in accordance with established regulations. • Identify and plan areas for camping, picnicking, partying and other accompanying OHV activities. • Identify and designate areas appropriate for competitive events. • Make improvements necessary for user safety and convenience. • Designate new OHV trails, where necessary, to afford better access to OHV play and competition areas. • Provide maps, guides, BLM presence to assist users.		
III. SIGNIFICANT NATURAL & CULTURAL AREAS	The purpose of a Significant Natural & Cultural Area is to preserve and enhance recreational experiences which are especially oriented to nature study, cultural interests, outstanding scenic quality, and scientific and educational values. A further intent of this class is to recognize and protect recreational resources which are particularly sensitive to human use. (Example Management Class Goals) • Prepare detailed activity plans to assure resource protection.	a. Nature study and observation, including rare and endangered species. b. Photography/painting c. Cultural observation/study d. Hiking e. Scientific study f. Historic sites g. OHV touring, along designated roads and trails	• Outstanding Natural Areas (BOR-Class IV) • Historic and Cultural Sites (BOR-Class VI) • Research Natural Areas • Areas of Critical Environmental Concern (ACEC)

MANAGEMENT CLASSES	PURPOSE/DESCRIPTION	REPRESENTATIVE ACTIVITIES	CORRESPONDING CLASSES/TERMS PRESENTLY USED BY BLM
SIGNIFICANT NATURAL & CULTURAL AREAS (continued)	• Nominate significant historic sites to the National, State, county and local registers of historic places. • Fence important petroglyph areas to provide protection and to ensure preservation; restore vandalized petroglyphs. • Maintain, protect, preserve and upgrade wildlife habitats. • Enhance wildlife by: 1) improving livestock management, 2) restricting vehicle use to designated roads and trails, and 3) protecting and/or improving water sources. • Protect and upgrade areas with endangered plant species. • Withdraw specific sites (e.g. petroglyph sites), if necessary, to protect recreation and public values. • Limit camping and parking to designated areas only. • Identify priorities for acquiring private lands to assure protection of most significant areas. • Stress policies of noncollection of plants and animals. • Encourage educational, research, interpretive, nature and cultural study types of activities. • Plan designated nature and hiking trails.		• National Natural Landmarks • Interpretive & Sightseeing Areas • Restricted Vehicle Use (Interim Critical Management Program)
IV. WILDLAND RECREATION AREAS	The purpose of a Wildland Recreation Area is to provide opportunities for people's enjoyment of a high quality, natural environment, virtually unspoiled by human interference. (It is intended	a. Backpacking b. Primitive, unimproved site camping c. Cultural observation (individual/ small group)	o Primitive Areas (BOR-Class V) o Candidate Wilderness Study Areas

MANAGEMENT CLASSES	PURPOSE/DESCRIPTION	REPRESENTATIVE ACTIVITIES	CORRESPONDING CLASSES/TERMS PRESENTLY USED BY BLM
WILDLAND RECREATION AREAS (continued)	to preserve the primitive aspects of the Desert for those recreationists who seek the most solitude and remoteness from others in their recreational experience.) This class includes existing primitive areas and designated wilderness areas. (Example Management Class Goals) • Manage areas for low to very low user densities to provide for a primitive desert experience. • Place future power lines and utilities underground, where possible. • Remove old pipe, junk, and other visual man-made intrusions. • Obliterate grafitti on rocks. • Designate access roads to the Wildland Area and classify roads for use by properly-muffled vehicles only. • Paint man-made intrusions, such as the aqueducts, with colors that blend with the natural scenery. • Provide for vehicle parking outside the Wildland Area. • Rehabilitate landscape scars, where practicable. • Minimize and mitigate grazing impacts through management under a grazing system. • Submit a request for withdrawal from mining and other forms of entry, if necessary, to protect and preserve the wilderness experience.	d. Collecting (individual/small group) e. General hiking (individual/small group) f. Horseback riding (individual/small group) g. Nature study/observation (individual/small group) h. Photography/painting (individual/small group) i. Rockclimbing j. Spelunking (individual/small group) k. Rockhounding (individual/small group)	• Wilderness Areas • Primitive Areas

MANAGEMENT CLASSES	PURPOSE/DESCRIPTION	REPRESENTATIVE ACTIVITIES	CORRESPONDING CLASSES/TERMS PRESENTLY USED BY BLM
WILDLAND RECREATION AREAS (continued)	• Acquire the private lands within the Wildland Area. • Discourage intense use by limiting access, signage, and convenience facilities. • Establish buffer zones between wildland areas and High Density Recreation Areas, OHV Play and Competition Areas or other intense activity areas.		

FACTORS IN DETERMINING DESERT RECREATION CARRYING CAPACITY

Many factors affect recreational carrying capacity and many factors can affect one another in the determination of carrying capacity. During the Phase I Advisory Group Workshop meetings, many carrying capacity factors were identified and discussed. This section lists management, bio-physical, and psycho-social factors which are most likely to be important in establishing recreational carrying capacities in the California Desert. The comprehensive list of factors presented here should be used in the Phase II Recreational Carrying Capacity Study. It shows Phase II recreation planners the factors to examine when considering carrying capacity; helps make discussions with resource specialists and users more meaningful; provides a basis for data collection and field observations; and serves as a useful guide for establishing carrying capacity ranges for specific activity areas.

FACTORS AFFECTING DESERT RECREATIONAL CARRYING CAPACITY

Management Factors	Information Types
• Institutional policies/ directives	• Specific legislative directives
• Management objectives	• Type and degree of resource maintenance and restoration program
	• Degree of improvements proposed by BLM
	• Degree of emphasis on management/control
• Degree of policing and control	• Type of policing/control required or desired (trail and open area observation, type of shooting range vs. undirected)
• Adjacent non-recreation uses and External Influences	• Existing land use maps, land use plans for adjacent non-BLM areas, and information regarding external influences.

Bio-Physical Factors	Information Types
• Resource sensitivity to any type of human use or disturbance	• Map identifying sensitive areas (significant cultural and natural areas; sensitive plant and animal areas, sensitive soil areas, etc.)
1) Geological capability to withstand human use	• Criteria for determining "low density" General Recreation Areas
2) Wildlife capability to withstand human use	• Specific information about resource sensitivity for the activity area
3) Plant life capability to withstand human use	• Number of users an area can hold before changing resource

Bio-Physical Factors (cont.)	Information Types (cont.)
	• Knowledge about numbers of people, vehicles, etc. and their impact on the various kinds of desert resources, and the various plant & animal communities
	• Number of users a specific type of resource can tolerate
• Resource scarcity/uniqueness	• "One-of-a-kind" resources
	• Endangered and rare specie areas
	• Unique natural & cultural areas
• Resource capability to serve as base for certain activities	• Location of activity area
	• Resource requirements of the activities
	• Accessibility to site and within site
	• Scenic value
	• Criteria for evaluating resource capability
• Physical space required for activity to function	• Information regarding the minimum space required for the activity to function
• Physical space required for safety	• Safety standards or guidelines from authoritative sources
• Recoverability of the resource	• Time it takes a resource to recover from overuse
	• Ability to improve resource values

Bio-Physical Factors (cont.)	Information Types (cont.)
	• Type and extent of restoration program
	• Type of plant community and animal habitat
	• Micro-climate
• Siting limitations	• steep slopes rock or other barriers flood areas woodland, trees wind direction, velocity slope aspect landforms
• Configuration of the area	• Length, width, shape
• Size of area	• Acreage
• Type and extent of vegetation	• Amount of vegetation • Type of vegetation • Density of vegetation • Height of vegetation
• Activity/specific requirements of a bio-physical nature	• Amount of game in the area • Stability of trail surface - type of trail surface (paved tract, etc.)
• Micro-climate	• Temperature • Rainfall • Wind speed direction • Exposure to sun/shade
• Plant and Animal Density, Distribution & Diversity	• Information regarding plant & animal density, distribution & diversity

Psycho-Social Factors	Information Types
• User types and expectations	• Socio-economic characteristics of users • General requirements & expectations of desert recreationists
• Preferred distances between other visitors	• Information regarding preferred distances between users and other activity areas
• Primary and secondary activity combinations	• Type of primary activity and secondary activity - typical combinations
• Inherent compatibility with other activities	• List of compatible & incompatible activities & situations, taking into account noise, functional conflict, dust, etc.
• Distance from other activity areas	• Locations of other activity areas
• Multiple uses - activity compatibility/combinations	• Management Objectives & information about activity compatibilities
• Level of user proficiency	• Information regarding predominant type of user (expert, novice, etc.)
• Behavior of other users	• Information about the behavior of the people using the area

Psycho-Social Factors (cont.)	Information Types (cont.)
• Homogeneity of users	• Homogeneity of users (age, sex, race, etc.) expected to use the activity area
• Degree of privacy afforded by the area	• Natural characteristics of the site
• Group size vs. individual usage	• Information about the expected kind of users - groups, families, individuals
• Degree of organization	• Degree of organization generally associated with the activity

DESERT PLANNING STUDIES CONTRIBUTING TO CARRYING CAPACITY DETERMINATION

One of the outcomes of the first California Desert Recreational Carrying Capacity Advisory Group Workshop meeting was the identified need to know more about the many BLM - contracted studies underway or to be undertaken. It is expected that the results of many of these studies, as noted in Chapter 4 will provide valuable input to the Overall Framework and the Detailed Carrying Capacity Approach.

Over 80 different BLM-contracted studies are being undertaken as part of the California Desert Planning Program. To help determine which of these studies will be most useful in providing input to the recreational plan/carrying capacity element, those DPS people responsible for the various studies were asked to complete a brief questionnaire relating to their study's purpose, expected end products, and possible relevancy to the Phase II Recreational Carrying Capacity Study. The completed questionnaires were used during this Phase I study to identify key sources of data and determine inputs to the recreation plan/carrying capacity element of the Desert Plan.

This section includes a list of the various DPS studies, an example of the questionnaire completed by DPS staff, and a description of those studies which are expected to significantly contribute to the development of a recreation plan and carrying capacity guidelines for the California Desert.

LIST OF DPS STUDIES/CONTRACTS

Recreation

1. Study of Organized Recreation Groups Use*
2. On-Site Recreation Use Study*
3. Recreation Carrying Capacity*
4. Education and Research*
5. Public Opinion Survey(s)*
6. Recreation Supply: Demand Study
7. Recreation Economics*
8. Interpretation/Environmental Education*
9. Psycho-Social Satisfaction*
10. History of Recreation in the Desert*
11. Visual Resource Analysis*

Vegetation

1. Inventory of the Botanical Resource of the CDCA*
   a. Northern Mojave
   b. Southwestern Mojave
   c. South central Mojave
   d. Eastern Mojave
   e. Central Mojave
   f. Eastern Colorado
   g. Western Colorado
2. Desert wide Vegetation Inventory
   a. LANDSAT Vegetation Map (first cut)
   b. Vegetation Transects
3. Characterization of Climate of CDCA
   a. Regional Characterization of Climate CDCA
4. Plant Response Parameters*
   a. Selected Endangered Species
   b. Selected Major Species
5. Plant Species Study, Eastern Colorado Subdivision
6. Effects of Recreation Use on Desert Vegetation*

*Studies which will most significantly contribute to the preparation of the recreation plan in Phase II.

Soils/Watershed

1. Soil Inventory*
2. Water Resource Study
3. Soil Impact Study*
4. LANDSAT Interpretations

Geology-Energy-Minerals (G-E-M)

1. Paleontological Resources*
2. LANDSAT Lineament
3. Geostatistical Survey

Cultural Resources

1. Procurement Request for Cultural Resource Overview:* Darwin, Eureka, Panamint, Saline Planning Units
2. Procurement Request for Cultural Resource Overview:* Bitterwater, Kingston, Owlshead/Amargosa & Mojave Basin

(Inventory)

3. Procurement Request for Cultural Resources (Class II): Mojave Basin and southern half of Owlshead/Amargosa
4. Procurement Request for Cultural Resources (Class II): Kingston, Bitterwater, north Owlshead/Amargosa

Lands/Planning

1. Desert Wide Economic Analysis
2. Profile and Analysis of Population Growth and Economic Development (1940-1977)
3. Historic Land Use
4. Comparative Population and Economic Trend Analysis (to the year 2000)
5. Comparative Analysis and Projection to the year 2000 of the Second Home/Recreational Properties Market
6. Attitude Survey of Desert Residents*
7. Impacts on the Desert of Foreseeable Technological Developments*
8. Social Indicators Analysis

Wildlife

1. Acquisition of important museum records. (Several small purchase orders)
2. Major and minor literature searches, annotated biblio.
   a. fishes, amphibians, reptiles
   b. birds
   c. mammals
   d. flat-tailed horned lizard
      Colorado Desert fringe-toed lizard
   e. impacts of grazing on wildlife population and habitat
3. Impacts of ORV's on California Desert-Special Studies*
4. Impacts of Noise (all kinds) on vertebrates*
5. Impacts of Grazing - special studies
6. Studies on significant/sensitive amphibians*
   a. New Inyo Batruchoseps
   b. Afton Canyon
   c. Amargosa River
   d. Dacurn Falls
   e. San Felipe Marsh
   f. Smuggler's Cave
   g. East face of Sierra Nevada
7. Studies on Sensitive Reptiles*
   a. Desert Tortoise -
      Study plots in Chemehuchvi Valley, W. Fremont Peak, Ivanpah Valley, Goffs, Chuckwalla Bench
   b. Desert Tortoise -
      5 study plots
   c. Inventory of rare and sensitive reptiles*
      1. Providence-Ft. Piute
      2. Clark, Kingston
      3. Panamints
      4. E. face Sierra Nevada
8. Studies on Sensitive Birds*
   a. Raptors-distribution, status
   b. Raptor foraging
   c. Swainson's Hawk
   d. Bendire's Thrasher
   e. Rails
9. Migratory Pathways of Birds
10. 25 Breeding Bird Surveys
11. 25 Winter Bird Surveys
12. Use of Springs by Birds
13. Sensitive Species of Mammals*
   a. Microdipodops pallidus
   b. Burro Mule Deer
14. Invertebrates*
   a. distribution of rare and endangered arthropods on dunes
   b. analysis of rare species distribution within one dune system (Kelso)

*Studies which will most significantly contribute to the preparation of the recreation plan in Phase II.

c. limited distribution of rare species only to dune situation-test hypothesis (Eureka Dunes)
d. analyze existing data on several major groups of anthropods to determine potential critical habitats, CEAs

15. Identification of small mammal specimens

EXAMPLE OF QUESTIONNAIRE COMPLETED FOR THE VARIOUS DPS STUDIES

NAME OF STUDY/CONTRACT _____

Name of Person Filling Out Sheet _____ Date _____

QUESTIONS ABOUT THIS STUDY

1. What is the purpose and specific objectives of the Study?

   Purpose: _____

   _____

   _____

   _____

   Objectives:

   • _____ • _____

   _____ _____

   _____ _____

   • _____ • _____

   _____ _____

   _____ _____

2. (a) What end products (types of specific data and information) are completed or anticipated as a result of this Study?

   End Products

   • _____ • _____

   _____ _____

   _____ _____

   • _____ • _____

   _____ _____

   _____ _____

(b) How will the end products be portrayed? (In what form will the results of the study be presented?)

Anticipated Form of the Study Results (Please check the appropriate one(s) and, if possible, provide examples and attach them to this sheet)

_____ Data Sheets (attach examples)

_____ Tables (attach examples)

_____ Flow Chart (attach examples)

_____ Summary or List of Findings and Conclusions

_____ Maps (please attach example map titles and legends)

_____ Automated/Computerized

_____ Other (specify below and if possible attach examples)

3. (a) Is the Study Desert-wide? Yes _____ No _____

   (b) If the Study is not desert-wide, how could the results be used or applied on a desert-wide basis?

   _____

   _____

   _____

   _____

   _____

   _____

4. In what ways do you think the results of your study will contribute to decisions about resource use for recreation?

   _____

   _____

   _____

DESCRIPTIONS OF STUDIES DEEMED MOST SIGNIFICANT AS INPUTS TO PHASE II

Recreation Studies/Contracts

ON-SITE RECREATION USE OF THE CALIFORNIA DESERT

Purpose/Description - The purpose of this study is to systematically determine the level of actual use of the California Desert, to derive information about the different types of recreation activities in the desert, and to determine user desires, satisfactions, and dissatisfactions. Recreationists at approximately 180 sites in the desert will be surveyed six times over a 12 month period to determine what actually happens at present recreation sites.

End Products - A socio-economic profile of desert visitors; information on user attitudes, motivations, and satisfactions; maps of use areas and study sites; automated tabular data.

Relevancy to the Phase II Study - Information about existing use levels and types of uses, reasons for recreating in specific areas, and the satisfactions sought and encountered will be useful in establishing and allocating management class areas, and in establishing psycho-social carrying capacities for individual activity areas.

ORGANIZED RECREATION GROUPS STUDY

Purpose/Description - This completed study identifies organized groups that recreate in the desert, indicates the extent to which they use the desert, and explains group concerns, attitudes, and satisfactions associated with their use of the desert.

End Products - A list of sites used by interviewed clubs; satisfaction, user attitudes and concern profiles; a list of recreation activities.

Relevancy to the Phase II Study - The study identifies activity polygons which can be used as inputs to the overall framework. Also, information in this report helps in the preparation of the activity compatibility matrix described in this Chapter.

HISTORY OF RECREATION USE OF THE CALIFORNIA DESERT

Purpose/Description - This study will describe the history of recreation in the California Desert. The emphasis of the study will be on the time period between 1960 and the present, which is characterized by relatively intense recreation use as compared to previous periods. This study will address the following:

- earliest identified types of outdoor recreation in the California Desert;
- changes in recreational activities and in intensity of use through time;
- history of ORV competitive events in the desert;
- conflicts between off-road vehicular recreationists and other recreationists and desert users;
- conflicts between recreationists and the Bureau of Land Management;
- efforts of the Bureau of Land Management to deal with planning for and management of outdoor recreation in the desert;
- status of current recreation planning and management in the desert;
- identification of primary areas historically utilized by various types of recreationists;
- summarizations of the expressed concerns of various recreation groups who utilize (have utilized) the California Desert;

- important Federal legislation, policy, and regulations which have related to outdoor recreation in the desert;
- interpretation of long range, desert recreational trends; and other items.

End Products - A descriptive history of recreation use of the California Desert; a map showing ORV competitive event areas.

Relevancy to the Phase II Study - A full understanding of the background events relating to recreation and recreation management in the California Desert provides a basis for determining patterns of recreation demand and use, and developing the criteria necessary to decide on relative importance of desert recreation areas in Phase II.

NATIONAL PUBLIC OPINION SURVEY

Purpose/Description - The purpose of this survey is to provide information on use of and attitudes toward the California Desert by people nationwide. Specifically, the survey determines degree of use of the California Desert by people nationwide; determines how the nation would like to see the California Desert managed; and provides insight on the nation's attitudes toward scenic quality and intrusions.

End Products - Survey results.

Relevancy to the Phase II Study - This type of public input toward the desert will help guide recreation planners in developing recreational resource management objectives and allocating resource use and protection according to national attitudes.

STATEWIDE PUBLIC OPINION SURVEY

Purpose/Description - The purpose of this study is to provide information on current desert recreation use and its relationship to certain socio-economic factors as well as the attitudes, values, and perceptions of California residents. The study examines who uses the desert, why people use the desert and when the desert is used.

End Products - Survey printouts and narrative analysis.

Relevancy to the Phase II Study - Recreational resource plans and management decisions in Phase II will be guided by public use patterns and attitudes toward the desert as a recreational resource.

LITERATURE REVIEW OF PSYCHO-SOCIAL SATISFACTIONS OF OUTDOOR RECREATION

Purpose/Description - This study will consist of an extensive review of professional literature that deals with psychological and sociological satisfactions associated with outdoor recreation in a general sense, and those satisfactions as they relate to specific recreation activities. The primary objectives of this study are to:

- identify the common psycho-social satisfactions that underlie all or most outdoor recreation activities;
- identify satisfactions that are peculiar to specific activities or groups of activities;
- identify the differences in the psycho-social satisfactions that might exist amongst various recreation activity types; and
- identify compatibilities and incompatibilities amongst recreation activity types as a result of common or divergent psycho-social perceptions and attitudes about the environment or the outdoor recreation resource.

End Products - Final narrative report answering the stated study objectives.

Relevancy to the Phase II Study - Results of this study can be used to make adjustments to the activity compatibility matrix and guide in the establishment of management classes and psycho-social carrying capacities.

INTERPRETIVE AND ENVIRONMENTAL EDUCATION OPPORTUNITIES IN THE CALIFORNIA DESERT

Purpose/Description - The purpose of this contract is two-fold: first, sites in the desert that have interpretive potential will be identified, described, and evaluated. Secondly, the study will identify opportunities for cooperation and coordination with environmental education programs of school districts, museums, and other institutions that use the desert.

End Products - Narrative descriptions of interpretive and environmental education resources; map(s) of interpretive sites and resource areas.

Relevancy to Phase II Study - Areas worthy of development or protection for education, research, or interpretation, once identified, can be considered as areas to be planned and managed to maximize user satisfaction or resource protection in Phase II.

EDUCATION AND RESEARCH

Purpose/Description - This study will determine the intent of education activities, and scientific research in the California Desert by educational institutions.

End Products - A description of use or non-use of the Desert by all primary and secondary schools in southern California, and colleges and universities throughout the State.

Relevancy to the Phase II Study - Provides information about significant natural and cultural resources of the California Desert to be recognized in the allocation of resources and determination of management objectives in Phase II.

RECREATION ECONOMICS

Purpose/Description - This study will identify and define the economic role of outdoor recreation in the California Desert.

End Products - A final report describing recreation's role in the economics of the California Desert.

Relevancy to the Phase II Study - Information about the economics of recreation in the California Desert will guide in decision making regarding satisfaction of recreation demand in the desert and the economic consideration necessary in allocating desert recreation resources to meet such demand.

VISUAL RESOURCE ANALYSIS

Purpose/Description - This study will evaluate and rate visual resource attributes in the California Desert. Land surface features, vegetative features, and structure features will be rated on the basis of their form, line, color, and texture.

End Products - Visual resource ratings.

Relevancy to the Phase II Study - This analysis can be used to help identify visually attractive recreation sites in the desert and the ratings can be used as criteria for evaluating relative importance of recreation resource areas.

RECREATION SUPPLY: DEMAND STUDY

Purpose/Description - This study will address recreation supply and demand in the California Desert.

End Products - A final report with information about recreation supply and demand.

Relevancy to the Phase II Study - This study will help determine future recreation needs (Overall Framework Step #8) and identify future recreation demand areas (Overall Framework Step #8d and #8e) in the California Desert.

Vegetation

PLANT RESPONSE PARAMETERS (Several Contracts)

Purpose/Description - The purpose of this study is to be able to predict how varied plants and plant communities will respond to different users and user intensities.

End Products - Monographs on selected plant species; quantitative results showing how plants respond to different intensities of off-road vehicle use; interpretation of results of life history studies; pictures, drawing, nutritional needs, seed viability, and other data compiled for certain species and populations.

Relevancy to the Phase II Study - Information about plant response to different uses and use intensities will provide guides in the establishment of bio-physical carrying capacities.

FLORISTIC INVENTORY OF THE CALIFORNIA DESERT CONSERVATION AREA

Purpose/Description - The purpose of this study is to inventory all plant species present in the California Desert Conservation Area. The study will locate and identify rare, threatened and endangered plants.

End Products - Maps showing locations of rare, threatened and endangered plants; elevation transects, photographs of selected species.

Relevancy to the Phase II Study - Knowing the locations of rare, threatened and endangered plants is essential when allocating management class areas to the California Desert and will be valuable when establishing and allocating management classes and in determining detailed carrying capacities of recreation activity areas.

Soils/Watershed

SOIL INVENTORIES

Purpose/Description - This study will obtain soils information for the Turtle Mountain and Amargosa Areas.

End Products - Soil inventory report, maps showing sensitive soils.

Relevancy to the Phase II Study - The inventory will identify soils which would be most susceptible to impact by off-road vehicle riding and other activities.

SOIL IMPACT STUDY

Purpose/Description - The objective of this study is to obtain information on the impact of off-road vehicles on the soil.

End Products - A report with information showing the impact of different levels of use at different moisture content levels.

Relevancy to the Phase II Study - This information can be used both when determining appropriate management class areas in the California Desert and when establishing detailed carrying capacity guidelines for specific activity areas.

Geology-Energy-Minerals

PALEONTOLOGIC RESOURCES

Purpose/Description - This study will compile existing data on vertebrate and invertebrate fossils in the California Desert, evaluate their potential value, and suggest management guidelines.

End Products - Lists of all published and unpublished works on fossils in the California Desert; location maps showing fossil sites; descriptions and classifications of these sites; statements on impacts of natural and/or human activities on fossil sites; list of institutions with collections, names of specialists with interest in the California Desert; recommended management guidelines.

Relevancy to the Phase II Study - This information can be used to help delineate appropriate management class areas.

Cultural Resources

CULTURAL RESOURCES OVERVIEW (Mojave Basin-Bitterwater; Saline-Darwin-Panamint-Eureka; Colorado Desert; High Desert)

Purpose/Description - This literature search study will aid in the evaluation and interpretation of cultural resources to serve as a background to field projects. The study will examine all pertinent and reasonably available documents which may contain information on the cultural resources of a given area.

End Products - Cultural history and historic overview; list of collections; management objectives; and other information.

Relevancy to the Phase II Study - This study will help to identify interpretable significant cultural resource locations.

CULTURE RESOURCES INVENTORY (Bitterwater; Mojave Basin; High Desert; Turtle - Palen)

Purpose/Description - The purpose of this study is to acquire field knowledge of cultural resources through a systematic sample inventory in order to make predictions regarding the cultural resource base, sensitive/significant areas, and areas of interpretive value.

End Products - Site records; transect records; site evaluations; sensitivity maps with significance ratings.

Relevancy to the Phase II Study - The information and maps can be used to locate interpretive sites and to establish appropriate management guidelines.

Lands/Planning

COMPARATIVE POPULATION/ECONOMIC TREND ANALYSIS TO 2000

Purpose/Description - The purpose of this study is to develop reasonable projections of economic demand and population changes for the desert to the year 2000.

End Products - A narrative report; maps; charts; statistical and graphical data; analysis of demand for minerals and energy; information about recreation/tourism expenditures and roles.

Relevancy to the Phase II Study - Future trends in outdoor recreation use will help guide decisions regarding recreation demand, relative importance of recreation areas, and the allocation of amounts of desert area for certain types of recreational use.

ANALYSIS OF TECHNOLOGICAL DEVELOPMENTS

Purpose/Description - This contract will study relevant futures and determine potential impacts on desert land use.

End Products - A report summarizes the relevant literature pertaining to future technological developments; and assessment of the most probable future.

Relevancy to the Phase II Study - The results of this study will serve as a useful guide for Phase II planning decisions relative to expected changes in desert recreation demand and use patterns.

Wildlife

IMPACT STUDIES

Purpose/Description - The purpose of this study is to determine the effects of various impacts on wildlife. The impacts of grazing, urbanization, noise, off-road vehicles, etc. will be examined.

End Products - Information regarding changes in densities and/or relative densities of species.

Relevancy to the Phase II Study - This information will be useful in determining the bio-physical carrying capacity of specific areas.

SENSITIVE AMPHIBIAN, REPTILE, BIRD, MAMMAL, AND INVERTEBRATE STUDIES

Purpose/Description - These studies will identify, locate and examine sensitive wildlife species in the California Desert.

End Products - Maps showing the locations of sensitive species; information about sensitive species and their habitats.

Relevancy to the Phase II Study - This study will identify areas in the desert where high density recreation uses should be discouraged in order to protect sensitive wildlife species.

OTHER STUDIES WHICH WILL CONTRIBUTE TO PHASE II

Vegetation Studies

CALIFORNIA DESERT DIGITAL MOSAIC STUDY

The purpose of this study is to identify and locate vegetation, soil and wildlife habitat types of the California Desert. Study will identify areas with potential for nature study, hunting, etc.

VEGETATIVE SURVEYS

This study will obtain accurate vegetation inventories of 150 selected sites for the purpose of characterizing the vegetation in terms of composition, production, and condition and for interpreting LANDSAT classification. The study can be used to identify quality areas of representative species which might be protected from heavy recreational use.

Soil Studies

LANDSAT STUDY

This study will use LANDSAT data to evaluate soil resources desert-wide. Maps will show different soil types and indicate use limitations.

WATER RESOURCE STUDY WITH USGS

The purpose of this study is to obtain desert-wide information on water resources. Maps showing water resources can be used to help identify and evaluate potential recreation areas.

VALLEY FEVER STUDY

This study is intended to determine the presence of valley fever fungus within areas of high ORV use. The results might be useful for establishing carrying capacities in ORV play and competition areas.

SAND DUNE STUDY

The purpose of this study is to determine the location, type and coverage of sand dunes. The results of this study can be used to identify possible areas for dune buggying.

DESERT-WIDE LANDFORM STUDY

This study will locate and classify the different types of landforms in the California Desert; it should help to identify recreation resources which are essential for certain activities (see the "Activity/Resource Relationship Matrix" in this Chapter).

AERIAL PHOTO CONTRACT

The purpose of this study is to obtain complete aerial photo coverage of BLM lands in the California Desert (scale of 1:30,000). The photos will be instrumental in determining wilderness areas, locating water resources (springs), identifying resources, and damaged areas.

Geology-Energy-Minerals (G-E-M) Studies

LANDSAT LINEAMENT

This study will obtain through the interpretation of lineaments, from LANDSAT imagery, a first cut classification in regard to the potential for G-E-M resources in the California Desert. The study may show valuable energy and mineral resources which should be protected.

GEOSTATISTICAL SURVEY

The purpose of this study is to obtain a first cut classification of energy and mineral resources in the California Desert using statistical analysis of existing data. The study may show valuable energy and mineral resources which should be protected.

Land/Planning Studies

STUDY OF THE HISTORICAL LAND USE IN THE CALIFORNIA DESERT

The purpose of this study is to obtain a documented history of land use in the California Desert (1950-1970). The study will show past trends in recreation land use, which may have some bearing on future recreation uses.

PROFILE AND ANALYSIS OF POPULATION/ECONOMIC DEVELOPMENT - 1940-1977

The purpose of this study is twofold: 1) to understand the economics within the California Desert and their relation to southern California, the State and the U.S.; and 2) to understand past and present population characteristics. Data will measure personal expenditures, sales and employment within the recreation sector of the California Desert.

Wildlife Studies

LITERATURE SEARCH/ANNOTATED BIBLIOGRAPHY

This literature research effort will obtain information about the many organisms in the desert. It will provide a better understanding of the needs of desert animals; the information should provide guidelines for recreation management.

MULE DEER

This study will determine the distribution of the mule deer within the California Desert. The information could be used to help identify hunting areas and to establish the amount of hunting limitations.

BIRD STUDIES IN AFTON CANYON

The purpose of this study is to evaluate the effects of camping (i.e. the human disturbance resulting from camping) on bird communities. The information may be useful when establishing bio-physical carrying capacities.

KEY TERMS

KEY TERMS

Activity Compatibility Matrix - A chart showing compatibility evaluations for individual recreation activities in the California Desert. (See Chapter 6, pages 81-83)

Bio-Physical Carrying Capacity - The level of recreational use of a resource beyond which irreversible biological deterioration takes place, physical and function safety hazards occur or degradation of the physical environment makes the resource no longer suitable or attractive for that recreational use.

California Desert Conservation Area (CDCA) - The Federally designated 16 million acre area (see P.L. 94-579, Section 601(c)) for which BLM's Desert Planning Staff is preparing a comprehensive long-range management plan to provide for its protection within a program of multiple use.

Carrying Capacity Study - Phase I - The initial phase of BLM's two-phase Study of Recreational Carrying Capacity in the California Desert. This first phase develops an approach for preparing (in Phase II) the recreation resource use and carrying capacity plan for the California Desert.

Carrying Capacity Study - Phase II - The second phase of BLM's two-phase Study of Recreational Carrying Capacity in the California Desert. This phase will use the approach developed in Phase I to actually prepare the recreation resource use and carrying capacity plan for the California Desert.

Delphi Method - As used in this study, the Delphi Method is a way of determining numerical recreational carrying capacities for selected recreation activities and resources; it is based largely upon the knowledge and judgement of a group of experienced persons gathered together to exchange ideas and make choices.

Desert Planning Staff (DPS) - The Bureau of Land Management's California Desert Planning Staff. The DPS was established in 1972 to develop a long-range plan for land use and management of desert resources.

Detailed Carrying Capacity Methodology - A process for establishing numerical carrying capacity guidelines for recreation activity areas in the California Desert. (See Chapter 5, Detailed Carrying Capacity Methodology.)

Draft Final Recreation Plan - The final recreation plan report prepared prior to the interface of the recreation plan element with the other desert plan elements.

Final Plan Guidelines - Resource use recommendations, management objectives, carrying capacity recommendations, and specific management recommendations.

Final Recreation Plan Element - The final Recreation Plan portion of the overall Desert Plan.

Independent Guide Plans - Plans prepared based on a specific set of facts, independent of other sets of facts. In this study, the "Resource Capability Independent Guide Plan" will be based on natural resource facts and will help the Desert Planning Staff (DPS) make decisions about the capabilities of desert recreational resources to sustain recreational use; the "User/Demand Independent Guide Plan" will be based on user facts and will help DPS make decisions about recreation use patterns and future demand locations in the Desert.

Institutional Directives/Constraints - Legislative mandates, policies, actions; Federal and State regulations; BLM policies and procedures; and other established policies, regulations and objectives which serve as guidelines for preparing the recreation plan element for the California Desert.

Management Framework Plan (MFP) - The preparation of the MFP is the second phase of BLM's present planning process. The land use plan which establishes, for a given planning area, land use allocations, coordination guidelines for multiple use, and management objectives to be achieved for each class of land use or protection. The MFP is the second phase of BLM's present planning process. It is prepared in three steps: Step 1 - Resource Recommendations, Step 2 - Impact Analysis, and Step 3 - Decision-making.

Multiple Use - The management of the public lands and their various resource values so that they are utilized in the combination that will meet the present and future needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustment in use to

conform to changing needs and conditions; the use of some land for less than all of the resources; a combination of balanced and diverse resource uses that takes into account the long-term needs of future generations for renewable and nonrenewable resources, including but not limited to, recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific and historical values; and harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment with consideration being given to the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output. (As defined in the Federal Land Policy and Management Act of 1976, P.L. 94-579.)

Off-Highway Vehicle (OHV) - For the purpose of this study the term Off-Highway Vehicle (OHV) refers to any street licensed vehicle when not traveling on a paved highway or road or any publically-maintained dirt road. Any non-street licensed vehicle is an OHV wherever used.

Off-Highway Vehicle (OHV) Riding - Riding off-highway vehicles as defined in this study for:

- OHV Play (Riding an OHV for the principal purpose of enjoying the fun and excitement of the OHV riding experience)
- OHV Competition (Riding an OHV during an organized competitive event)
- OHV Touring (Riding an OHV for sightseeing, exploration, and discovery purposes)
- OHV Access (Riding an OHV to travel to and gain access to recreation activity areas)

Overall Recreation Carrying Capacity Approach - The recommended two-part process for preparing the recreation element of the Desert Plan. This process involves:

Part 1 - The Overall Recreation Plan and Carrying Capacity Framework (See Chapter 4).

Part 2 - The Detailed Carrying Capacity Methodology (See Chapter 5).

Priority Area Use Plans - Detailed recreation activity/management plans for those resource areas which are in need of immediate

action for use management.

Procedures - Specific ways of accomplishing the "Steps" as defined herein.

Psycho-Social Carrying Capacity - The level of recreational use of a resource or area beyond which the user's expectation of the experience is not realized and he/she does not achieve a reasonable level of satisfaction.

Recreational Carrying Capacity (As Viewed in this Study) - The capability of a recreational resource to provide opportunity for certain types of satisfactory recreational experiences over time without significant degradation of the resource.

Recreation Resource Capability Guide Plan - See "Independent Guide Plans".

Recreation Resource Management Objectives - Specific statements of desire regarding the purposes of using and managing a desert recreation resource and providing specific direction for actions toward achieving the purposes.

Recreation Use Polygons - Recreation activity areas and nodes which can be delineated in the California Desert Conservation Area; DPS has already mapped over 180 existing use polygons.

Resource/Activity Relationship Matrix - A chart showing which desert resources are "essential", "desirable", "undesirable", and "not necessary" for conducting the various desert outdoor recreation activities. The matrix is a starting point for further research and can be used as a planning guideline during the Phase II Study. (See Chapter 6, pages 86-88).

Sketch Plan - The initial recreation plan developed from a blending of the results of the two independent guide plans--resource capability guide plan and user/demand guide plan. The sketch plan map designates desert areas according to recreation resource management classes; it is intended to be a working preliminary plan created for early evaluation and subsequent refinement.

Steps - The individual tasks to be accomplished during the preparation of the recreation plan element of the Desert Plan.

Sustained Yield - The achievement and maintenance in perpetuity of

a high-level annual or regular periodic output of the various renewable resources of the public lands consistent with multiple use. (As defined in the Federal Land Policy and Management Act of 1976, P.L. 94-579.)

Tentative Recreation Resource Management Classes - The preliminary recreation management classes prepared during this Phase I Carrying Capacity Study. These classes are used as examples in the description of the Overall Framework procedures in Chapter 4; they provide the basis for deciding on management classes in the later Phase II Carrying Capacity Study. (See page 91 for descriptions of each individual class.)

Unit Resource Analysis (URA) - The URA is the information, collection, and analysis phase of BLM's present planning process. The URA consists of the following four steps: Step 1 - Base Map, Step 2 - Physical Profile, Step 3 - Resource Inventory, and Step 4 - Opportunitization (Resource potential and capability of the land to fill the public's need for these resource activities: lands, minerals, recreation, wildlife, watershed, forest products, and range management).

User/Demand Independent Guide Plan - See "Independent Guide Plans".

BLM LIBRARY
BLDG 50, ST-150A
DENVER FEDERAL CENTER
P.O. BOX 25047
DENVER, COLORADO 80225

BORROWER'S CARD

Form 1279-3
(June 1984)

GV 191.42 .C2 U73 1978
8805117
Study of recreational
carrying capacity in the

DATE LOANED	BORROWER	OFFICE	DATE RETURNED

USDI — BLM

(Continued on reverse)

GV 191.42 .C2 U73 1978

Study of recreational
carrying capacity in the